RESCUING THE CIO
Doug Lewis says sometimes it's better to rehabilitate an underperforming CIO than to fire him. **PAGE 28**

SWAB THAT DISK
Idaho Power is rounding up unscrubbed company disk drives sold on eBay by a salvage vendor. **PAGE 8**

COMPUTERWORLD

THE VOICE OF IT MANAGEMENT ■ WWW.COMPUTERWORLD.COM

MAY 8, 2006 ■ VOL. 40 ■ NO. 19 ■ $5/COPY

SPECIAL REPORT: WEB DEVELOPMENT

Accessibility Issue Comes To a Head

Target lawsuit could be a test case; new wave of apps concerns blind users

BY CAROL SLIWA

Bruce Sexton Jr. wants to be able to access the same Web content that anyone else can. Because he can't, he now finds himself at the center of a potentially precedent-setting legal fight over Web site accessibility.

Sexton, who is legally blind, relies on software that reads his PC's screen from left to right and top to bottom, skipping ahead when he uses keyboard-based shortcuts. When he visits Target Corp.'s Web site, a robotic voice announces staccato-style the presence of alternative text to describe images of the retailer's logo and its "Target dog" mascot.

But the screen-reader software doesn't read the weekly list of special offers on Target's Web site, Sexton said. He can't tell whether the numbers he hears on other parts of the home page correspond to products, files or something else.

Deeper into the site, he doesn't know which item goes with which price. "It's difficult to find anything," Sexton said. As a result, he no longer tries to buy goods from the Target site, which for a long time he couldn't do anyway because, he said, it

Web Access, page 12

It's very, very, very scary. Now you don't even know where to click.

JEFF BISHOP, AN IT WORKER WHO IS BLIND ON DYNAMIC WEB APPLICATIONS

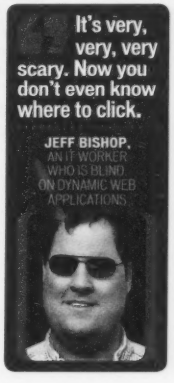
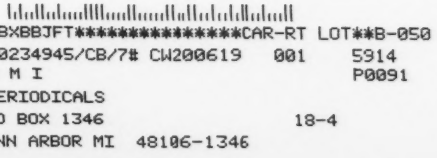


ILLUSTRATION BY BRIAN STAUFFER



Are You M&A-Ready

PAGE 49

It's a safe bet that there's at least one merger or acquisition in your company's future. That can mean total chaos unless you get your IT shop prepared for speedy integration.

Web Services, BI Tools Speed Path to Data

With SOA, users get operational data straight from the source, say IT execs

BY HEATHER HAVENSTEIN

Next month, Long & Foster Real Estate Inc. will for the first time marry Web services with business intelligence tools in a project designed to boost its housing sales and win new listings.

The Fairfax, Va.-based real estate firm plans to launch a new application in June that will use a service-oriented architecture to provide its real estate agents with near-real-time BI reports showing the likelihood that a home will sell based on the interest it generates on the company's Web site.

"With SOA, we would just go directly against the data source. All you would have to do is refresh your report to get real-time data."

KIRK HEWITT, DIRECTOR OF REPORTING AND FINANCIAL SYSTEMS, VALERO ENERGY CORP.

Long & Foster is one of a growing number of companies that are starting to use SOAs to speed the flow of operational data to BI tools for end users.

At Valero Energy Corp., the nightly data warehouse loading process requires 1,000 separate jobs to move data to its SAP Business Information Warehouse and 500 jobs to get data into its Oracle warehouse, said Kirk Hewitt, director of reporting and financial systems at the San Antonio-based oil refiner.

In September, Valero plans

Web Services, page 68

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_INFRASTRUCTURE LOG

_DAY 16: It's out of control. It takes people forever to access...everything. We can't get anything done. We're so inefficient. There's got to be a better way.

_DAY 17: Gil says he's found one: aerodynamic bodysuits. He says everyone will be able to work faster and better now.

_DAY 21: I've taken back control with IBM WebSphere Portal—a simple and fast start to a service-oriented architecture. It works with what we have and integrates the apps, processes and info our people need to do their jobs effectively. Works with our customers and suppliers, too. Now we have a customizable interface that puts everything at our fingertips.

_Productivity is up. Gil says that's great, but he refuses to take off his suit.

WebSphere. Portal

Download IBM's WebSphere Portal ROI Tool at:
IBM.COM/**TAKEBACKCONTROL**/PORTAL

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05.08.06

Real-Time Protection

In the Technology section: Users of continuous data-protection technology, such as EvansonBest IT Director Martin Silverman (left), say that they don't worry about lost data and that backup and restore processes are easier than ever before. **Page 33**

The Seven Deadly Sins of Outsourcing

In the Management section: We asked experts and IT veterans to talk about the bad decisions and faulty assumptions that can cause outsourcing projects to fall from grace. They came up with seven sure paths to outsourcing hell. **Page 56**

NEWS

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16 **The state of Oregon** has sued Election Systems & Software for allegedly breaching a contract to supply handicapped-accessible e-voting systems.

18 **Global Dispatches:** The Business Software Alliance is increasing the bounty it offers for reports of illegal software use in the U.K.; and an official says membership in the WTO has cost China $1 billion in royalty payments on patents.

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23 **Oracle has delayed** delivering some patches after they failed tests to ensure that they don't disrupt other applications.

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Are You a Computerworld Reader?

If you've been reading this publication for 20 years or more, we'd like to interview you for a special report commemorating *Computerworld*'s 2,000th issue. Please contact Mitch Betts (mitch_betts@computerworld.com) as soon as possible.

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42 **QuickStudy: NDMP.** This open standard is designed to manage data backup and recovery of network file servers and other specialized storage appliances.

44 **Security Manager's Journal: Offshore Security Is Out Of Sight, Not Out of Mind.** Mathias Thurman embarks on a trip to observe his company's overseas operations and educate offshore workers about the need for good security practices.

MANAGEMENT

49 **Are You M&A Ready?** The ability to quickly integrate two disparate IT departments is one of the keys to a successful merger. Here are some things CIOs can do now to facilitate a smooth transition later.

60 **Career Watch.** An expert explains why you should consider a prospective employer's corporate structure; a survey shows what makes software engineering the best job in the U.S.; a poll reveals the consequences of bad staffing decisions; and there's a new push to make tech careers appealing to high-school students.

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28 **Doug Lewis** thinks it's too costly to fire CIOs who aren't truly incompetent. He has tips for rehabilitating them.

29 **Michael Gartenberg** sees business uses for Microsoft's Origami platform because it combines functionality and mobility.

30 **Sandra Gittlen** points out the advantages of networking — the human kind, that is.

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ONLINE

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Beware the Networking Counterfeiters

NETWORKING: Neal Rauhauser, a networking architect, says some less-than-savory characters could be selling you inferior equipment. He tells you how to avoid them.
www.computerworld.com/networking

Warning: This Is Only a Draft

MOBILE/WIRELESS: Hype over the proposed 802.11n Wi-Fi specification has led to the release of a slew of "draft n" products. But after testing some, columnist Craig J. Mathias says it would be wiser to save your money until a final standard is approved.
www.computerworld.com/mobilewireless

Review: IE 7 Has No Soul

One thing *Computerworld*'s Scot Finnie says he's learned from reviewing IT products for 20 years is that if he's not intrigued when he first tries a product, he's unlikely to become a real user later on. And he's definitely not excited about Microsoft's new browser.
www.computerworld.com/desktopapps

QuickPoll Results

Will new CEO Jonathan Schwartz help Sun return to profitablity?

Take this week's QuickPoll at *www.computerworld.com.*

SOURCE: COMPUTERWORLD NONSCIENTIFIC SURVEY; 215 VOTES.

ONLINE DEPARTMENTS

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The Online Store	computerworld.com/store

_INFRASTRUCTURE LOG
_DAY 35: Whoa! Came in today and found a black hole. Information goes in but doesn't come out. This is bad.
_DAY 36: The black hole just sucked in three interns. HR is not pleased.
_DAY 38: I've taken back control with IBM Information Management middleware. It's built on open standards. Totally scalable. Seamlessly unites all our critical information, whatever its source. Now our info has real business value that can help spur growth.
_We got everything back from the black hole. Except the interns.
IBM

Information Management

See innovative IBM Info Management solutions in action:
IBM.COM/**TAKEBACKCONTROL**/INFOMGMT

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AT DEADLINE

Microsoft to Release Three Patches

Microsoft Corp. this week plans to release one critical patch for its Exchange messaging server and two patches, at least one that is critical, for Windows. The updates may require restarts and can be found online using Microsoft's Baseline Security Analyzer tool. Microsoft also plans to include a new version of its Windows Malicious Software Removal Tool in its Patch Tuesday release.

Borland to Cut 300 Jobs in Realignment

Borland Software Corp. announced a restructuring plan last week that calls for laying off 300 employees, or 20% of its full-time workforce. Most of the staff cuts will result from a realignment of Borland's international operations, officials said. Borland expects the layoffs, a geographic consolidation and the upcoming sale of its developer tools group to generate annual savings of about $60 million.

Unisys to Resell All JBoss Products

Unisys Corp. and JBoss Inc. have signed an expanded agreement that allows Unisys to provide service, support and training for all JBoss products, including the components in the integrated JBoss Enterprise Middleware Suite. Unisys said the deal is part of an effort to provide open-source products and open standards to enterprise customers.

JCP Approves New Version of Java EE

Sun Microsystems Inc. said the latest version of the enterprise edition of Java was approved last week by the Java Community Process, the committee that manages Java development. Sun said the Java Platform Enterprise Edition 5, the Java EE 5 Software Development Kit and the Compatibility Test Suite will be released to developers during next week's JavaOne conference in San Francisco.

Users Scrutinize Hosted VoIP

Avaya details new service at Interop

BY MATT HAMBLEN
LAS VEGAS

AVAYA INC. last week announced a set of subscription-based IP telephony, call center and voice-mail services for businesses — an unusual move for a networking equipment vendor, since hosted voice over IP is primarily the domain of telecommunications carriers.

But some IT managers at the Interop Las Vegas 2006 conference said they have found fault with the services offered by network operators, prompting them to install VoIP systems internally or look for hosting alternatives.

For example, XM Satellite Radio Holdings Inc. has been using the new hosted versions of Avaya's call center applications for the past three weeks after having difficulties in the past with such offerings from conventional telecommunications services providers.

"My name is Tanya, and I am a victim of the service providers," said Tanya Callaway, director of technical operations at Washington-based XM. Callaway said she has worked with several telecommunications vendors that offer hosted call center services, but "they don't know the call center business, and they can't move fast enough for me."

She said XM prefers using hosted systems to support its call center, which for 10 months of the year employs about 1,600 customer service agents — a number that mushrooms to 3,000 in November and December. That requires the firm to quickly grow systems capacity in the fall, said Callaway, who added the network operators XM has used haven't been agile enough.

Although Avaya will have to prove itself next fall, its Contact Center On Demand hosted service seems to be working well thus far, she said.

The call center service costs $50 to $150 per agent each month, said George Humphrey, director of the On Demand program at Basking Ridge, N.J.-based Avaya. He added that monthly pricing starts at $25 per user for Avaya's IP telephony service, while the voice-mail service starts at $5 per user.

Zeus Kerravala, an analyst at Yankee Group Research Inc. in Boston, said that overall, telecommunications carriers "haven't done a good job" in setting up hosted VoIP services for corporate users.

But some Interop attendees said it's hard to know whether an equipment vendor like Avaya would be able to handle services any better on hosted systems than the carriers have.

Tim Ryan, network manager at the City College of San Francisco, said he installed a VoIP system based on equipment from Alcatel SA as part of a wider $2 million communications upgrade two years ago. Ryan said he is getting an annual savings of $400,000 from the VoIP technology, compared with the cost of an earlier Centrex phone system.

The college considered hiring a hosted VoIP provider but found that the cost of a hosting service would have negated the savings it was forecasting. "It would have been a safer route but didn't give the benefits," Ryan said.

Martin Webb, manager of data network operations for the provincial government of British Columbia in Canada, said he considered signing up for a hosted VoIP service four years ago. But he instead decided to take an in-house approach with equipment from Nortel Networks Corp. and management tools from Apparent Networks Inc. in Vancouver, British Columbia.

> "My name is Tanya, and I am a victim of service providers. They don't know the call center business, and they can't move fast enough for me."
>
> TANYA CALLAWAY

The issue wasn't whether a carrier was qualified to handle a hosted VoIP system, Webb said. Rather, the provincial government wanted to continue to use previously deployed voice switches and its existing voice-mail system. Whether a network operator or other VoIP service provider would have left those technologies in place was questionable, he said. ▸

Microsoft, SAP to Ship Link in June

BY MARC L. SONGINI

Sometime rivals SAP AG and Microsoft Corp. next month will start shipping a jointly developed product that links SAP's business applications with Microsoft's Office desktop software.

The plan to build a tool for accessing SAP ERP and CRM data via the Outlook interface was launched a year ago as the Mendocino project. The technology shipping in June will be called Duet, officials said.

Duet will let Microsoft Outlook users access and interact with back-end SAP applications. The software has been installed in some 100 joint sites for testing. Among the test sites is San Jose-based semiconductor maker Atmel Corp., a user of SAP's R/3 ERP software. Atmel CIO Mikes Sisois said a handful of users in the company's finance and marketing operations have been testing Duet since January. Atmel is likely to install a production version of the software in July, after a rollout of the mySAP ERP software is finished, Sisois said.

He said that about 20% of Atmel's R/3 base is power users who won't care about Duet's ease of use. But many employees who use SAP sparingly will benefit from using the Outlook interface, he said.

Duet is aimed at corporate users who rarely run SAP applications but are regular Office users, said Sharada Achanta, SAP's senior director of solution marketing for emerging solutions.

The first iteration of the tool, Duet 1.0, will link Microsoft and SAP applications to support budget monitoring, employee time and leave management, and organization management. For example, an employee can record work and billable hours in Microsoft Outlook and then synchronize the data with SAP software.

While Duet will probably be successful, it faces a number of hurdles. Among them is the need for competitors Microsoft and SAP to closely cooperate, according to a recent note issued by analysts at Boston-based consultancy AMR Research Inc. ▸

DUET PLANS

DUET 1.0: focuses on time and leave management functions.
SHIPS: June

VALUE PACK 1: enables self-service recruitment and travel management and exposes SAP-generated data through reports.
SHIPS: Third quarter

VALUE PACK 2: links Outlook with sales and contact management and supplier relationship management apps. It also adds support for five languages.
SHIPS: Fourth quarter

IBM
_INFRASTRUCTURE LOG
_DAY 49: Things are out of control. Our system is just not secure, flexible or reliable enough. Gil bought some "infrastructure bloodhounds" online. He says they can sniff out any problem.
_DAY 50: They can't. But IBM Tivoli Express middleware can. It's a series of I.T. management solutions designed and priced for mid-sized businesses. Secure, boosts uptime, and protects our data with automated backups. We even got help customizing and implementing it.
_DAY 52: Remind Gil: Bloodhounds not as good at sniffing out problems as they are at chewing Ethernet cables.
Tivoli. Express
Get the Guide to simple, fast, secure I.T. Management at:
IBM.COM/TAKEBACKCONTROL/SIMPLE

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Utility's Disk Drives — And Data — Sold on eBay

Power company scrambles to retrieve recycled drives from online buyers

BY SHARON FISHER

ANYBODY WITH five bucks and a little patience may be able to score sensitive corporate data on eBay.

Organizations engaging in the common practice of disk drive recycling — selling unneeded disk drives directly or through a service — may find that company data winds up for sale on eBay Inc.'s auction site, even if the drives have been wiped first.

Idaho Power Co. found itself in that situation last week as it attempted to track down unscrubbed company disk drives that had been sold on eBay.

The drives contained confidential employee information, correspondence with customers and memos that discussed proprietary company information, the company said.

The Boise, Idaho-based utility supplies electricity to approximately 460,000 customers in southern Idaho and eastern Oregon.

Idaho Power said it hired Grant Korth of Nampa, Idaho, to recycle about 230 SCSI drives. Korth sold 84 of those drives to 12 parties, which have not been disclosed by the company, using the eBay Web site. The remaining 146 drives were returned to Idaho Power, the company said.

Korth declined to comment on the situation.

Search and Retrieval

Idaho Power has received assurance from 10 of the 12 parties that bought drives over eBay that the hardware would be returned or the data on them would not be saved or distributed. The other two parties are still being tracked down, the company said.

An Idaho Power spokesman said the company has hired a Seattle law firm, Blank Law & Technology PS, to launch an investigation to determine what information was on the affected drives and why they weren't scrubbed as required.

Typically, Idaho Power either destroys drives or scrubs them to U.S. Department of Defense standards, the spokesman said. In this case, the salvage vendor was to have scrubbed the drives to DOD standards, he said.

The company said it will not know what regulatory penalties it may face until the investigation is completed.

In the meantime, Idaho Power has implemented a new policy that calls for drives to be destroyed rather than sold for salvage. That's the type of policy advocated by Simson Garfinkel, a postdoctorate fellow at Harvard University's Center for Research on Computation and Society who has researched the issue.

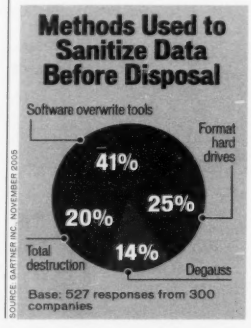
"The resale value of a hard drive is really minuscule," he said. "These things are worth $5 to $20 each. I don't think anyone's buying them on the secondary market for extortion, but you never know."

Frances O'Brien, an analyst at Gartner Inc., said the distribution of drives carrying unscrubbed data is commonplace. "It happens all the time," she said. Typically, a user either doesn't know to clean the drives or doesn't do it correctly, she said.

Aside from the financial concerns related to losing data, organizations that improperly recycle disk drives can run afoul of a number of federal regulations, such as the Sarbanes-Oxley Act and the Health Insurance Portability and Accountability Act, O'Brien said.

In addition, such incidents could lead to significant penalties in states like California and New York that have broad privacy regulations, said Robert Houghton, president of Redemtech Inc., a Columbus, Ohio-based outsourcer.

When a company hires an outsourcer — which is a practice Gartner recommends — it needs to be aware of the outsourcer's methods for cleansing data, O'Brien said. "If everyone else is charging $20 and someone says they'll do it for $2," he said, "you've got to wonder why."



Mainframe Sites Remain Key To Sun's Storage Strategy

BY PATRICK THIBODEAU
WASHINGTON

Sun Microsystems Inc.'s Scott McNealy may call the mainframe "an airplane with pedals," as he did last week, but such systems remain a big part of Sun's storage business, thanks in part to its acquisition of Storage Technology Corp. last year.

So when asked to reconcile McNealy's view with the company's StorageTek business, executives at Sun's quarterly product announcement event here last week chuckled politely and said the vendor is spending millions of dollars buying mainframes for storage-related development.

Prior to the acquisition, about 40% of StorageTek's customers used mainframes, the most recent figures executives would provide.

Nonetheless, Jon Benson, vice president of development at Sun's StorageTek unit, noted that "it's not the hardware that's important; it's the way we tie into those applications."

Indeed, Sun's long-awaited Honeycomb content-addressed storage system, which the company demonstrated, includes embedded search technology that will let application writers offload the search capabilities to the storage system.

NEW PRODUCTS

Sun Storage

Sun StorageTek 5320 NAS Appliance: Based on 2.6-GHz AMD processor
Pricing: Starts at $49,990 for 2.4TB system.
Available: Now

Sun StorageTek Virtual Storage Manager System 5: Offers double the capacity of the prior release
Pricing: Not yet available
Available: In 90 days

Sun StorageTek Virtual Storage manager 4e: Entry-level tape virtualization system
Pricing: Not yet available
Available: In 90 days

Sun's ZFS file system: Part of Solaris 10; automates tasks, and can detect and correct data corruption
Pricing: Included in Solaris 10
Available: June

Honeycomb, now shipping in limited quantities, will be generally available this quarter, said James Whitemore, vice president and chief marketing officer for Sun's data management group.

One user at last week's event, Justin Shaffer, vice president and chief architect at Major League Baseball Advance Media LP, said he was interested in the Honeycomb system because it can move storage closer to the data. "The more efficient we can make processes internally for accessing media and then redistributing it, the better off we are," he said.

Sun officials also took time during the event to assure StorageTek users that the company will address their concerns about the combined firm.

One of those customers is Erv Kuhnke, a consultant at B2C Inc., an Alexandria, Va.-based government IT consulting firm, who attended the event in part to learn more about Sun's plans to further integrate the StorageTek operation into its own. Kuhnke said he's "a little concerned" about Sun's integration plans. StorageTek, he noted, "has always had excellent service."

The idea of layoffs or other cutbacks at Sun — resulting from both the StorageTek acquisition and poor financial results — continues to hang in the air, users said. New CEO Jonathan Schwartz said at the time he was appointed two weeks ago that some "pruning" of the workforce is possible.

Scott McNealy, who gave up his CEO role but still serves as chairman of Sun's board, said last week that Sun can get "cost synergies" from its integration of StorageTek, including combining 160 redundant field sales and support offices.

"That will actually have a positive effect" by allowing Sun to price more aggressively and improve product integration, he said.

"I'm not sure that taking — as Jonathan called it — a pruning effort to expenses necessarily means a reduction in the actual head count," said McNealy.

Sharon Fisher contributed to this story.

IT'S A NOTEBOOK.
IT'S A TABLET.
IT'S THE BEST OF BOTH WORLDS.

Fujitsu recommends
Microsoft® Windows® XP Tablet PC Edition

LifeBook® T4000 Tablet PC

- *Configurable to only 4.3 lbs.*
- *A versatile, built-in modular bay*
- *Up to 8.5 hours maximum battery life*
- *XGA wide-view display with optional indoor/outdoor XGA wide-view and standard SXGA+ high-resolution displays*

It's a notebook *that converts* *into a tablet.*

Why limit yourself to an ordinary tablet or notebook? The Fujitsu LifeBook T4000 Tablet PC with Intel® Centrino® Mobile Technology instantly changes from one to the other with just a twist and flip of its brilliant, 12.1" screen. From the field to the back office, this no-compromise solution is the only mobile computing platform you need. With its built-in modular bay, you have the flexibility to burn CDs and DVDs, work up to 8.5 hours between charges, or trim down to a nimble 4.3 lbs. It also features the exclusive Fujitsu BayLock™ utility, which keeps the media drive and its contents safe should you accidentally hit the release button while in Tablet PC mode. To find out why the LifeBook T4000 Tablet PC gives mobile professionals the best of both worlds, visit **www.shopfujitsu.com/LifeBookT4000** or call **1.800.FUJITSU**.

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BRIEFS

Sun Claims Azul Infringed on Patents

Sun Microsystems Inc. has filed a lawsuit in federal court in California charging network-attached processing specialist Azul Systems Inc. with infringing on its memory technology patents. The filing counters a suit Azul filed in March asking the court to block a threatened Sun lawsuit. Sun's suit seeks a jury trial to consider its claim for exemplary and punitive damages to deter Azul from infringing on its patents.

Mozilla Releases Fix For Firefox Bug

Mozilla Corp. has released an update to its Firefox browser that fixes a security flaw in the open-source software. The bug, reported late last month, relates to the way Firefox handles JavaScript code. Attackers could use the flaw to crash an unpatched browser or trick the browser into running malicious code.

Kraft Awards EDS $1.7B IT Contract

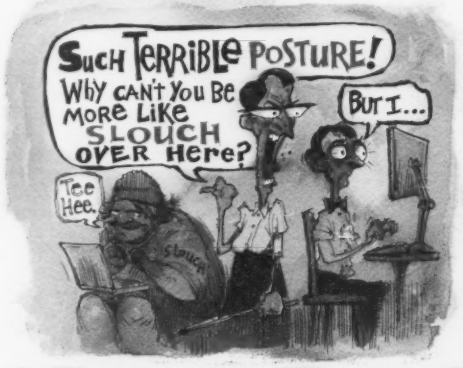
Kraft Foods Inc. has signed a seven-year, $1.7 billion contract to outsource its IT infrastructure, including data centers and desktop and telephone support, to Electronic Data Systems Corp. As part of the agreement, about 670 Kraft employees will join Plano, Texas-based EDS. EDS will be responsible for all of Kraft's IT infrastructure except for application development. The transition to EDS is expected to take place next month.

AttachmateWRQ To Acquire NetIQ

AttachmateWRQ has agreed to acquire NetIQ Corp. for about $495 million. AttachmateWRQ, formed from the 2005 merger of Attachmate Corp. and WRQ Inc., is owned by an investment group. Upon completion of the acquisition, NetIQ will operate as an AttachmateWRQ business unit and will no longer be publicly traded. The deal is expected to close in about 90 days.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL



MATTHEW HALLENBECK

A Focus on 'Proper' Ergonomics . . .

. . . can lead to blurry vision. So asserts Dr. Jeffrey Anshel, who has practiced optometry for 30 years — specializing for the past 15 in the eye problems of computer users through his practice, Corporate Vision Consulting, in Carlsbad, Calif. Anshel observes that conventional ergonomic wisdom has us sit up straight at our desks. But ergonomics experts "straighten our posture by pulling up our eyes," he says. Not only is that awkward and uncomfortable, but it's wrong for reading, according to Anshel. "We should be looking down when we're reading," he contends, saying that people sitting in front of computers should also have a slightly lowered posture.

37.6
Average number of hours IT workers spend looking at monitors every week, per MetaFacts Inc.

But even with such modifications, IT professionals, who topped a 2005 MetaFacts Inc. survey as the workers who spend the most time in front of computer screens, are fighting against nature just doing their jobs. Human eyes evolved to see long distances, not to do close-up work, Anshel explains. What few near-range tasks they are adapted for should be done on a horizontal surface, such as a table or workbench — not the vertical plane of a computer display. Eye problems can be serious and include double vision or color distortion, not to mention the more common problems of blurred vision and headaches, says Anshel. So keep an eye on your posture. Slouch a little.

Speedy voice-over-IP deployment . . .

. . . yields lessons. Ida Salazar, vice president of information and communication technology and special projects at AAA Oregon/Idaho, is rightly proud of leading the rollout last winter of VoIP services as part of the regional travel service firm's new business continuity plan. In a mere 119 days, the Portland, Ore.-based affiliate of the national AAA automobile association chucked out 16 aging PBX systems and installed VoIP technology in 22 locations for 500 call center employees, who handle a total of 4 million calls per year. Salazar says that AAA Oregon/Idaho will see a full return on the project within three years just in the savings from remote workers no longer using internal toll-free numbers to connect with colleagues. Still, Salazar says that in hindsight, she would have done a couple of things differently. For example, she'd request funding upfront for network testing tools to use during and after the installation. Also, she'd make sure users were satisfied with service and performance levels before letting the VoIP team move on. One location had intermittent performance problems that weren't fully addressed before the project team went to the next site, Salazar admits. "If I had to slow down the project to get each site right, I would," she says.

SALAZAR: Go slow with VoIP and make end users happy.

Check out SekChek so it can check . . .

. . . out the health of your systems. Andrew Chodelski, vice president of marketing at SekChek Information Protection Services CC, says the Woodmead, South Africa-based company has been collecting data about security and operating system settings on NetWare, Unix and Windows systems, plus IBM's System i5 line, for more than a decade. SekChek has collected tens of thousands of profiles of computer environments in that time, and it offers a service that scans your systems for vulnerabilities within two to 15 minutes and then encrypts the collected data and sends it to SekChek's data center for analysis. The next day, you get a report. "We're like the blood analysis lab for computers," Chodelski says. He adds that the report shows you how your systems compare "with those of your industry peers," usually a total of 300 companies. For example, you can see the average number of remote users that IT departments support. And, of course, you can see how secure your own systems are. Because of the sensitive nature of the data it gathers, SekChek expects to complete a SAS 70 security audit for its data center by the end of the month. Pricing for the service starts at $400 per system that is scanned.

30k+
Number of system profiles in SekChek's database.

Lost-and-found service helps locate . . .

. . . wayward portable disk drives. If you equip your mobile workers with portable disk drives and they occasionally get lost (the drives, not your workers), you might be interested in the myDrive Lost-N-Found service, which is being launched next week by Pexagon Technology Inc. Guilford, Conn.-based Pexagon says that it will engrave identifying information on the enclosure of each drive it sells you. Honest folks who find missing devices can contact Pexagon, which will arrange for the drives to be returned to you. The service adds a one-time fee of $10 to the price of the drives.

PEXAGON
Lost portable disk drives can now find their way home.

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SPECIAL REPORT: WEB DEVELOPMENT

Continued from page 1

required the use of a mouse.

Sexton has joined the National Federation of the Blind (NFB) as a plaintiff in a lawsuit that charges Target with violating the federal Americans With Disabilities Act (ADA) and California's Unruh Civil Rights Act and Disabled Persons Act.

The lawsuit, scheduled for a hearing next month at U.S. District Court in San Francisco, could have a broad impact because Target's site is hardly the only one that could be accused of having access barriers, according to attorneys for the plaintiffs.

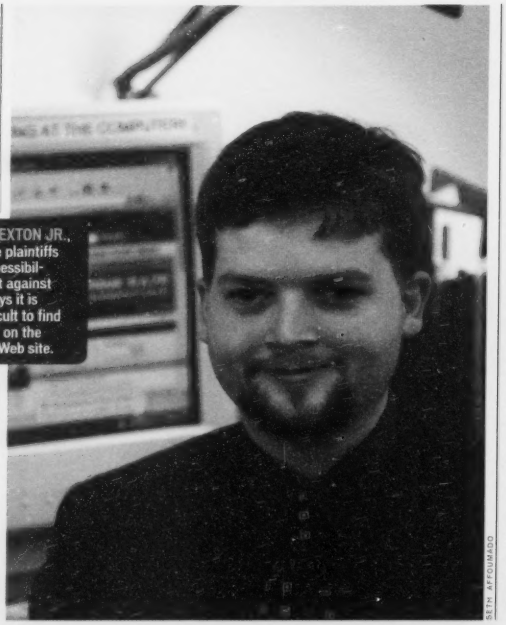
Web 2.0 Challenge

The move from text-based to visually oriented Web content has been tough on the blind, and now there's a new threat on the horizon. The shift to dynamic "Web 2.0" technology, which Gartner Inc. predicts will be pervasive by the end of next year, could exacerbate the problem of inaccessible sites.

A Web 2.0 application might make use of Asynchronous JavaScript and XML (AJAX) and Dynamic HTML to update information in a table without having to refresh an entire Web page. But screen readers, magnifiers and other assistive technology may not know which parts of the page have changed unless developers take steps to make sure the tools can glean that information.

"It's very, very, very scary," said Jeff Bishop, an application systems analyst at the University of Arizona in Tucson. "Before, so what? You had a missing [alternative-text] tag, but at least you knew there was an image. You could click on it, and maybe you could figure out what it was. Now, you don't even know where to click. You don't know how to interact."

Bishop, who is blind, and other advocates for people with disabilities aren't expecting an immediate fix. "We want to make sure companies are at least hearing what our concerns are," he said. "I'm not looking for a solution tomorrow. Even if it takes two years, that's fine with me, as long as I know they're working on it."



BRUCE SEXTON JR., one of the plaintiffs in the accessibility lawsuit against Target, says it is "very difficult to find anything" on the retailer's Web site.

SETH AFFOUMADO

But it's unclear whether many companies are doing so.

IBM, joined by other vendors, is leading a dynamic accessible Web content initiative within the World Wide Web Consortium (W3C). One proposal outlines a development syntax for mapping information about the elements of Web applications to an operating system's accessibility API so screen readers and other assistive technology will know what has changed on a Web page.

A second proposal details the means for adding semantic role information to a Web application so screen readers can identify rich objects, such as menus and tab panels, on pages.

Continued on page 14

Online Reach of Disabilities Law Is Hard to Grasp

Advocates for the blind say they prefer collaboration over lawsuits; courts have sent mixed signals on ADA applicability

ADVOCATES FOR THE BLIND often say that they prefer collaboration over lawsuits to try to get companies to make their Web sites more accessible. The less adversarial approach is more likely to produce the intended results, some claim.

But that strategy also makes pragmatic sense, because there currently are no clear-cut legal decisions for advocacy groups to stand behind.

The U.S. Department of Justice has suggested in legal briefs filed in support of private lawsuits that the Americans With Disabilities Act (ADA) does apply to Web sites that are operated by businesses or companies that serve the public, as defined by Title III of the ADA, although the agency has taken no enforcement action thus far. New York Attorney General Eliot Spitzer did two years ago, reaching out-of-court settlements with Priceline.com Inc. and Cendant Corp.'s Ramada Franchise Systems Inc. hotels unit, both of which promised to adopt a variety of the World Wide Web Consortium's accessibility standards.

But courts have sent mixed signals about whether the ADA requires companies to offer features that can help people with disabilities use their virtual stores, such as tags for alternative text or accessible image maps. Retailer Target, in defending itself against the lawsuit filed by the National Federation of the Blind (NFB), claimed that previous legal decisions support its position that the ADA doesn't apply to commercial Web sites.

In its legal filings, the retailer noted that Congress in 1998 amended Section 508 of the Rehabilitation Act to require that Web sites maintained by federal agencies and contractors be accessible to people with disabilities. But Target said federal lawmakers haven't taken similar steps to amend the ADA so it applies to private-sector sites, despite a hearing held in 2000 to explore the issue.

However, Daniel Goldstein, an attorney in Baltimore who is representing the NFB, claimed that the hearing was held in reaction to a suit that the Baltimore-based federation had filed against America Online Inc. The question under consideration was whether to amend the ADA so it would no longer cover the Internet, he said.

Even though the ADA doesn't specifically mention Web sites, the law has played a role in prompting changes to the sites of some major banks. Lainey Feingold, a private lawyer in Berkeley, Calif., has helped broker Web accessibility agreements with eight banks over the past six years on behalf of affiliates of the American Council of the Blind and various blind individuals.

Some sort of "hammer" was needed to get the banks to the negotiating table, and the ADA served as that tool, according to Feingold. She said that she points to the law "right there in the front page of the letter" that she sends to companies as she tries to kick-start the structured negotiation process.

According to its court filings, the NFB tried a similar approach with Target, notifying the retailer a year ago about what it claimed were "unlawful accessibility barriers" on the retailer's Web site. The two parties then entered into structured negotiations, which were ultimately unsuccessful, according to the legal briefs.

"Very often, we let somebody know that their Web site is inaccessible and they say, 'Oh my, we never intended that. Let's fix it right away,' " Goldstein said.

Neither the NFB nor Target would discuss why the negotiations failed. Target, which declined to comment on the court case as well, said in a statement that it is confident it will prevail in the lawsuit and that it strives to make its goods and services available to all customers, including those with disabilities. A June 5 hearing date has been set for Target's motion to dismiss the lawsuit.

Goldstein said companies can find a new market if they make their Web sites accessible to the blind. But he noted that the NFB may need to keep after them. "We're getting close to the point where we're going to have more ATMs capable of voice guidance than not, but we had tremendous resistance from banks for years and years," he said. "We filed many lawsuits, and we're still filing them."

– CAROL SLIWA

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But the proposals are still in draft form, and adoption remains uncertain. The Mozilla Foundation added support for the technology starting with its Firefox 1.5 browser. Microsoft Corp., however, has said its upcoming Internet Explorer 7.0 release won't support it, and the company has made no commitments for future editions of the browser.

Gartner analyst Ray Valdes has found that Fortune 500 companies have a very low level of awareness about making their public Web sites accessible. Most haven't modified their Web design and production methods and aren't thinking about fixing their current sites because they assume that doing so would be too costly, he said. They also haven't bothered to buy tools that could help them improve accessibility, Valdes said.

The W3C released accessibility guidelines for Web authoring tools more than six years ago, and it isn't aware of a single product that is fully compliant, said Judy Brewer, director of the consortium's Web accessibility initiative. But Brewer added that many of the newer authoring tools do have features that provide more support for producing accessible content. "And users should demand even better," she said.

Slow Demand

There are also evaluation tools that can assess a Web site's accessibility. One of the leading vendors of evaluation tools, Watchfire Corp., has no more than 70 U.S.-based corporate customers and 30 international users, largely from the governmental and financial sectors, for its enterprise-grade tool, according to Mike Weider, the Waltham, Mass.-based company's chief technology officer.

"We've long expected the accessibility market to grow more than it has. It really hasn't taken of," Weider said. But the NFB-Target case could change that, he added.

The allegations made against Target by the NFB and Sexton have set the stage for a court showdown that could finally clear up the murky legal question of whether the ADA, which was enacted in 1990, before the dawn of the Internet era, applies to Web sites.

The lawsuit claims that because Target's site is difficult if not impossible for the blind to use, the retailer is denying them equal access to the goods and services it provides to customers without disabilities. The NFB this week plans to file a motion for a preliminary injunction, asking the court to order Target to make its Web site accessible promptly.

Target two weeks ago updated a motion to dismiss the case, arguing that the laws in question don't apply to Web sites because they aren't "physical" places of public accommodation. The Minneapolis-based retailer further claimed that applying the California statutes to its Web site, which is accessible to consumers countrywide, would violate the Commerce Clause of the U.S. Constitution.

Mazen Baswari, a lawyer at Berkeley, Calif.-based Disability Rights Advocates, a co-counsel for the plaintiffs, contended that the ADA applies to any public place where commercial activity occurs — including Web sites. And even if the law didn't provide such blanket coverage, it would apply to Target's site because *www.target.com* is integrated

Massachusetts OpenDocument Plan Leads to Push for More Accessibility

Desktop apps using open-source document format aren't yet as good as those from Microsoft

TWO WORDS CAME TO MIND when John Winske, president of the Boston-based Disability Policy Consortium, learned just before Labor Day last year that Massachusetts was planning to adopt the Open Document Format for Office Applications as a standard for its executive-branch agencies.

"Screwed again," he thought.

Winske, who has muscular dystrophy, said he instantly remembered how Microsoft Corp. had to be "prodded and dragged, kicking and screaming" to make its software accessible during the transition from DOS to Windows.

None of the prominent desktop applications that can create and save documents in OpenDocument currently work well with screen readers, magnifiers and other assistive technologies – at least at a level comparable to that of products from Microsoft, whose 40-person Accessibility Technology Group is now widely praised by disabilities advocates.

Now, though, an uproar generated by groups such as Winske's is reverberating not only in the halls of the Massachusetts State House but at the research arms of some major technology vendors.

IBM's software accessibility team, for instance, put other projects on the back burner in November to make Massachusetts-related work its top priority, said Richard Schwerdtfeger, a distinguished engineer and accessibility architect/strategist at the company. Among other things, that meant a resource boost for IBM's Beijing labs in order to accelerate API work designed to make it easier for assistive technology vendors to support the company's Workplace office suite, he said.

Another IBM distinguished engineer is chairing a newly created OpenDocument accessibility subcommittee at the Organization for the Advancement of Structured Information Standards, which oversees the file format. In addition, IBM tapped three other employees to serve on the subcommittee, which also includes three members from Sun Microsystems Inc.

IBM also is accelerating development of a screen reader and a screen magnifier for Linux. And Sun is working on a combined open-source screen reader and magnifier called Orca. But those efforts are still in the early stages of development, officials said.

Getting support for OpenOffice, Workplace or Sun's StarOffice software built into screen readers and magnifiers won't be easy. According to assistive technology vendors, which are generally small companies, the economics of supporting applications that have limited market demand don't work in their favor.

Freedom Scientific Inc. supports Office, Notes and Corel Corp.'s WordPerfect Office with its market-leading Job Access With Speech screen reader, said Eric Damery, vice president of software product management at the St. Petersburg, Fla.-based company. Supporting applications in its screen reader – typically referred to by its acronym, JAWS – is "a big undertaking," Damery said. He added that the demand for OpenDocument-compatible office software "has not been that great."

"We have to support where our user base is, and like it or not, that's the Microsoft operating system, applications and browsers," said Ben Weiss, CEO at Algorithmic Implementations Squared Inc., a 21-employee company in Manchester, Vt., that makes magnification software called ZoomText. But Weiss said he has reached a financially attractive agreement with IBM and the Mozilla Foundation to make their products work with ZoomText and hopes to start development work this summer.

Meanwhile, Massachusetts CIO Louis Gutierrez last week issued a request for information about plug-ins or other converter options that would enable Office "to easily open, render and save to" OpenDocument files and let documents be translated between Microsoft's formats and OpenDocument. Gutierrez said one of the reasons the state is exploring Office plug-ins is because Microsoft's products are "ahead on accessibility right now."

The state is also taking other steps to soothe the concerns of disabilities advocates. For example, Massachusetts' IT division later this month plans to launch an accessibility lab that will be headed by a former employee of the Massachusetts Commission for the Blind who is "nationally recognized in this area," according to Gutierrez.

But Winske said he won't breathe a sigh of relief until he hears the state's planned midyear update on its OpenDocument implementation schedule, which Gutierrez has indicated will take into account what needs to be done to resolve accessibility issues.

The Disability Policy Consortium is prepared to file a lawsuit if the state doesn't follow through on that promise, Winske said. It is also considering legal action over the use of forms that are inaccessible to the blind on the state's Virtual Gateway health and social services Web site.

Winske said he likes the concept of open-source technology and hopes that OpenDocument will one day be accessible. "I have no problem with it," he said. "The Mozilla Project and Firefox have proved that if people build a better mousetrap, people will use it. It's a matter of making that mousetrap accessible."

SPECIAL REPORT: WEB DEVELOPMENT

with the retailer's brick-and-mortar stores, Baswari said.

Secil Watson, senior vice president of customer experience for the Internet services group at Wells Fargo & Co., said a good time for a company to think about making its site accessible is when it's planning a major redesign. It's "the right thing to do," she said.

San Francisco-based Wells Fargo four years ago began its accessibility push for people who are blind or visually impaired by making improvements to its most popular pages. But Watson said it was a major restructuring a year later that produced the most critical improvement: template-based pages that helped to enforce design and development consistency.

"What was good for the people with disabilities was good for everybody," she said.

Wells Fargo used the W3C's Web Content Accessibility Guidelines (WCAG), but Watson said the Web team didn't stop there. It added site-specific details to the more general WCAG directive and created a training document for the company's designers and developers to apply to both internal and external sites.

In addition, some of the bank's user-interface designers have been trained in the use of screen readers so they can see the bank's external site from the perspective of a blind customer.

"We're not just trying to make the site accessible," Watson said. "We're trying to make it a decent experience."

Like other companies, Wells Fargo is interested in exploring the use of DHTML and AJAX to create Web-based applications that could offer an even better online experience to end users. But Watson said that first the bank will have to figure out how to make the new technologies accessible.

Finding the Time

Nate Koechley, a senior front-end engineer at Yahoo Inc., which has already taken the AJAX and DHTML plunge, said learning to build accessibility features into applications developed with those technologies is mostly an issue of finding enough time, given the intense, almost frantic atmosphere of Web development. "Preserving and enriching accessibility is just another constraint of Web design and engineering," he said.

Koechley added that the development team at Yahoo has a great in-house resource — Victor Tsaran, the company's accessibility program manager, who is blind himself. "Now we can go over to his cube and say, 'Hey, does this work for you? Check it out,' " Koechley said.

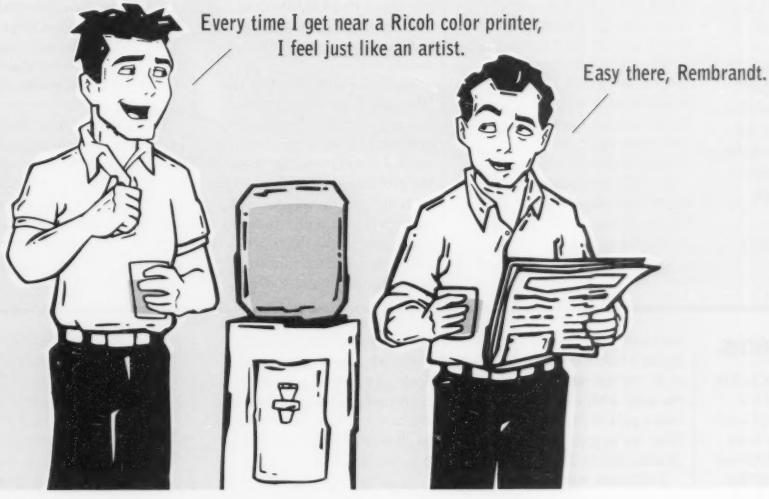
Mike Paciello, founder of The Paciello Group LLP, a Nashua, N.H.-based consulting firm that works to enhance the accessibility of software, said he is optimistic that the process of making applications accessible won't lag with technologies like AJAX and DHTML to the degree that it has with other technologies in the past.

"Technology that supports people with disabilities is so far behind," he said. "Whenever they start to get caught up, they get thrown back another five steps. [But] with AJAX, I don't think it will be five steps back because we already have a handle on it. We're probably one or two steps back."

For Paciello, the lack of a dynamic leader to raise awareness about the need for increased accessibility remains the larger problem.

And there's still much more work to be done, according to advocates for people with disabilities. Sexton, for one, said that he still can spend hours trying to figure out whether a Web site is just difficult to navigate or not accessible at all.

"It's frustrates me to no end," he said, "and it makes me feel that I'm not able to do something that everybody else can."



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Oregon Claims Vendor Breached Contract

Says e-voting machine maker caused it to violate fed law; ES&S denies charge

BY MARC L. SONGINI

OREGON LAST month filed a lawsuit charging that e-voting gear maker Election Systems & Software Inc. (ES&S) breached a contract to supply handicapped-accessible voting machines to the state. The state contends that the alleged breach has left it in violation of federal voting statutes.

The state said that it contracted last summer to buy $1 million worth of machines from Omaha-based ES&S to comply with the Help America Vote Act (HAVA). The statute requires that all U.S. voting precincts have e-voting systems that allow handicapped residents to cast ballots unaided by Jan. 1, 2006.

Oregon officials contend that ES&S backed out of the contract in January. The company said that it never agreed to a formal deal.

"The secretary of state [Bill Bradbury] is extremely upset and disappointed about this," said spokeswoman Anne Martens. "We had what we thought was a good choice to help the disabled people of the state vote privately and independently. The vendor we relied on pulled the rug out from under us."

The Oregon suit says that ES&S was awarded the contract last August, a month after the state's elections division issued a request for proposals (RFP) to supply handicapped-accessible voting gear.

Oregon selected the ES&S proposal to sell the state its AutoMark e-voting devices. At the time, though, ES&S said it would ship the gear only if the state "agreed to accept material changes and revisions" to the contractual provisions of the RFP, according to Bradbury's complaint, filed on April 19 in the Marion County circuit court in Salem, Ore.

Martens said that ES&S sought to limit its liability if the machines malfunctioned during an election. It also wanted to restrict access to AutoMark programming and other intellectual property to ES&S personnel.

According to the complaint, the elections division in Oregon did not agree to the changes, nor would it release ES&S from its contract.

Nonetheless, on Jan. 10, 2006, the vendor informed Oregon it wouldn't agree to the contract's terms, leaving the state in violation of HAVA.

Once ES&S abandoned negotiations with the state, Oregon signed a $438,000 contract with Louisville, Ky.-based IVS LLC to create a phone-based voting system.

The state will pilot-test the IVS system in up to 10 counties in primary elections to be held on May 16. It may be installed throughout the state for the November elections. In the interim, counties without the equipment will offer manual assistance to disabled persons.

The suit claims that the original agreement with ES&S is binding and is requesting that ES&S pay for the IVS system and any sum over the first $1 million spent by the state on new HAVA-compliant systems. The suit also wants the court to force ES&S to pay any penalties incurred by the state for noncompliance with HAVA.

Meanwhile, ES&S contended that it simply responded to the state's RFP and did not sign a contract to supply e-voting systems.

"We repeatedly attempted to work with state procurement officials, but procurement officials declined to substantively discuss any modifications," the ES&S spokesman said.

Hoosier Hearing

Meanwhile, Indiana Secretary of State Todd Rokita is slated to hold hearings today on allegations by some state elections officials that ES&S provided subpar voting system implementation services and defective hardware and software to several counties this year.

Under the Indiana election code, Rokita can levy fines of up to $300,000 per violation if ES&S is found guilty of the charges.

ES&S said it plans to "vigorously defend" itself against the Indiana allegations. However, the firm also acknowledged that "in this pre-election process, we have already indicated that we have not performed up to our own high expectations." ▸

ES&S Delays Could Slow Voting in Several States

AS THE 2006 election season begins, officials in several states that use e-voting gear from ES&S are scrambling to meet deadlines for testing e-ballots.

Officials in Texas, Arkansas, West Virginia and other states said ES&S has delayed shipping the electronic ballots needed for their voting machines. The ballots have to be tested locally before they can be used. The delay could cause problems in conducting elections, officials said.

In West Virginia, a state judge last week ruled that Secretary of State Betty Ireland can extend the state's deadline for testing electronic ballots for tomorrow's statewide election. The state had required testing to be completed one week prior to an election; now it must be completed today.

"ES&S has certainly made this process a difficult one for elections officials," said a spokesman for Ireland. "Our counties did everything right. They gave the vendor all the information in a timely fashion."

The spokesman said each county is expected to complete testing in time for tomorrow's election.

"ES&S has certainly made this process a difficult one for elections officials. Our counties did everything right. They gave the vendor all the information in a timely fashion."

SPOKESMAN FOR WEST VIRGINIA SECRETARY OF STATE BETTY IRELAND

Similar testing delays have occurred in Texas and Arkansas, where some districts are expected to have to use paper ballots in upcoming elections.

Until last week, personnel in Pulaski County, Ark., were unable to get accurately programmed cards for their ES&S iVotronic touch-screen systems, said elections director Susan Inman. The next Arkansas election will be held on May 23. The cards were slated to arrive three weeks ago, in time for early voting, which begins today.

An ES&S spokesman acknowledged "regrettable delays" but said that the company is working to meet the deadlines.

– MARC L. SONGINI

NetApp Unveils High-End SAN Systems

BY SHARON FISHER

In an attempt to boost its high-end storage business, Network Appliance Inc. today is slated to bring out two storage-area network products.

The new FAS6030 and the FAS6070 arrays have capacities of up to 420TB and 504TB, respectively, and support up to 16 Fibre Channel ports, the company said.

Noel Levasseur, an executive vice president of IT at First American Bank in Elk Grove Village, Ill., said his organization, which replaced an EMC Clariion array with a Network Appliance FAS940 a year ago, will evaluate the FAS6000 family if the bank's growth warrants it.

In recent years, Levasseur noted, First American's storage requirements have increased significantly.

"When we started out looking at a storage solution about four years ago, we were looking at a half a terabyte," he said. "When we came out of the gate with the Clariion, we had a pair of them with 2.7TB. Now we've got more than double that in 24 months."

Levasseur said the bank's data storage requirements have been growing rapidly for a number of reasons.

"When we went to voice over IP and our voice mail started coming into our e-mail box, our e-mail storage doubled in 30 days," he said.

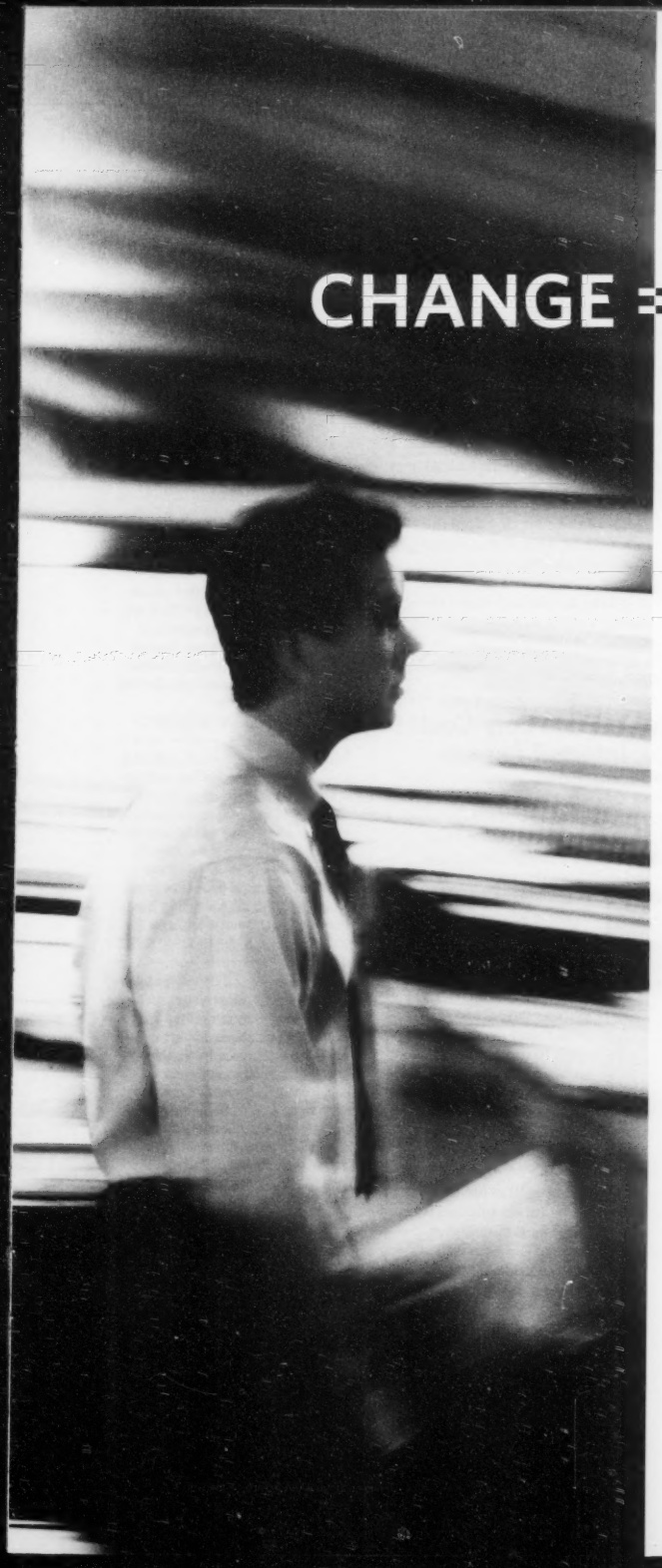
Sunnyvale, Calif.-based Network Appliance, which is seeking to gain credibility as a high-end storage vendor, said the new systems are designed to challenge EMC's Symmetrix product line.

"Can they get into the enterprise? Absolutely," said Brian Babineau, an analyst at Enterprise Strategy Group Inc. in Palo Alto, Calif. "NetApp continues to have a formidable portfolio on the low- to midrange, and they've extended that into a higher-performance system."

Evangeline Simones, an analyst at Evaluator Group Inc. in Denver, said the new high-end systems are a "natural evolution" for Network Appliance.

Both new arrays support Fibre Channel and Serial ATA disk drives that range from 9GB to 300GB on the Fibre Channel side and up to 500GB on the SATA side.

The FAS6030 is priced from $131,600 for 1TB of storage, and the FAS6070 starts at $195,225 with 1TB of storage. ▸



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GLOBAL DISPATCHES

An International IT News Digest

BSA Boosts Its Bounty On Software Pirates

LONDON

THE BUSINESS SOFTWARE Alliance is doubling through June 30 the bounty it offers to employees in the U.K. who report that their companies are using unlicensed software.

The vendor-funded BSA, whose European operations are based in London, is temporarily offering rewards of up to £20,000 ($37,000 U.S.) to whistleblowers in the U.K. In July, the group will revert to its regular payment offer of up to £10,000 for reports of unlicensed software, which it has had in place since 2000, a BSA spokesman said last week.

The BSA said it timed the special bounty offer to coincide with employee bonus and salary reviews at many U.K. companies. It claimed that during the review period, the likelihood that companies will be reported by disgruntled staffers is higher.

Many businesses still "think they can get away with" using illegal software, Siobhan Carroll, the BSA's regional manager for Northern Europe, said in a statement. "By doubling the incentives for informants, we are also effectively doubling the risk for businesses of getting caught out," she said. "Hopefully, this will make software licensing a higher priority."

■ MATTHEW BROERSMA, TECHWORLD.COM

Official Says Patents Are Losing China Money

BEIJING

A HIGH-LEVEL CHINESE official claimed late last month that the country has lost a total of $1 billion in disputes over intellectual property rights since it joined the World Trade Organization in 2001.

Science and Technology Minister Xu Guanhua told the state-run Xinhua News Agency on April 27 that intellectual property disputes — involving televisions, MP3 players, digital cameras and other products — have struck a "devastating blow" to parts of the Chinese economy.

Xu said that most Chinese companies don't apply for patents on their inventions and that many are making royalty payments to overseas patent holders. In addition, China's attempts to create wireless LAN and optical-disc technology standards in order to avoid having to pay royalties on foreign patents in those areas have been largely unsuccessful thus far.

Xu's remarks represent the Chinese government's first attempt to publicly encourage companies to develop products that aren't dependent on technologies from other countries, said David Wolf, CEO of Wolf Group Asia Ltd., a technology consulting firm in Beijing. He added that the new strategy could make it harder for foreign businesses to convince Chinese companies to adopt their technologies.

■ STEVEN SCHWANKERT, IDG NEWS SERVICE

Acer's Q1 Profit Doubles Despite Competition

TAIPEI

DESPITE WHAT EXECUTIVES called cutthroat competition among PC makers, Acer Inc. late last month reported that its first-quarter profit doubled from a year ago.

"It's been bloody fighting for the past three months," Acer Chairman J.T. Wang said, noting that rivals such as Hewlett-Packard Co. and Dell Inc. have stepped up their sales efforts in Europe, which is Acer's primary market.

Net profit at Taipei-based Acer rose to 5.23 billion New Taiwan dollars ($165 million U.S.), up from 2.56 billion New Taiwan dollars ($81 million) in last year's first quarter. Revenue increased 26% to 83 billion New Taiwan dollars ($2.6 billion), the company said.

Competition in the PC industry heated up as overall worldwide sales slowed during the first quarter, Wang said. He added that he expects Acer's rivalry with HP, Dell and other vendors to remain intense throughout the year.

■ DAN NYSTEDT, IDG NEWS SERVICE

GLOBAL FACT

$18B

The cost of security breaches caused by computer viruses, spyware, hacking attacks and thefts of IT equipment at British companies last year, up 50% from 2004.

SOURCE: PRICEWATERHOUSECOOPERS

Yahoo Tailors Southeast Asian Web Sites

MANILA

YAHOO INC. late last month announced plans to localize the home pages of its Web sites in the Philippines, Indonesia, Malaysia, Singapore, Thailand and Vietnam. Company officials said they hope that the move will help the company gain long-term loyalty from Internet users in those countries.

Sunnyvale, Calif.-based Yahoo, which is facing increased competition from Google Inc., said the new home pages will offer more content in each country's national language. The company said that its search and mail tools will also be converted into local languages.

Yahoo has already launched a localized version of its home page in the Philippines, said Reza Behnam, managing director of the company's operations in Southeast Asia. Behnam said Yahoo localized the Philippines site first because it anticipates significant growth in Internet use as a result of that country's effort to boost its native IT industry.

■ APRIL B. ROJALES, COMPUTERWORLD PHILIPPINES

Intel to Push Low-Cost PCs, Internet Access

SANTA CLARA, CALIF.

INTEL CORP. last week announced that it plans to spend $1 billion over the next five years to develop low-cost PCs for use in developing countries and to deliver Internet access to businesses and residents in those locales.

The company said that it will develop new types of affordable PCs, spread Internet connectivity via WiMax-based wireless broadband networks and train 10 million teachers to use the technologies.

In announcing its plan, which is dubbed World Ahead, Intel was careful to say that it isn't getting into the PC-making business. The company will contract with hardware manufacturers to build the new PC designs. The technologies developed as part of the plan will be sold in countries such as Mexico, Brazil, Egypt, Ghana, India and Nigeria, Intel said.

"There's been a lot of talk about getting cheap PCs into the hands of folks in developing markets," said Richard Shim, an analyst at Framingham, Mass.-based IDC. "But if they don't know how to use them, it won't work."

■ BEN AMES, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

BT Group PLC has bought Dabs.com PLC, an online technology retailer in Westhoughton, England, for an undisclosed sum as part of an effort to increase its Internet-based sales. The *www.dabs.com* Web site offers about 15,000 products to more than 1 million registered customers in the U.K. Dabs.com will retain its name and become a wholly owned subsidiary of BT, the companies said.

■ RADHIKA PRAVEEN, TECHWORLD.COM

Software AG in Darmstadt, Germany, said its first-quarter profit rose 23% year over year to €14.4 million ($18.2 million U.S.). Revenue in the three-month period that ended March 31 grew 13.5% to €113.8 million ($144 million). The vendor of databases and application development and integration tools credited strong software license sales for the growth in the quarter.

■ JOHN BLAU, IDG NEWS SERVICE

A group of U.S. scientists, with help from Sun Microsystems Inc. and federal government agencies, last week launched an online library containing more than 1 million research articles for use by scientists and university students in Iraq. The Iraqi Virtual Science Library project was started with $362,000 in seed money from the U.S. Department of Defense.

■ GRANT GROSS, IDG NEWS SERVICE

Germany's Federal Office for Information Security last week unveiled several open-source desktop and security applications during the LinuxTag conference in Wiesbaden. The applications were developed under the government's Experiment With Open Source Software project, which aims to make open-source technologies easier to install and use within government agencies.

■ JOHN BLAU, IDG NEWS SERVICE

Business Objects SA in Paris last week announced new tools for data federation and metadata management. Data Federator XI and Metadata Manager XI can present data from multiple sources through a common interface, improving the quality and consistency of information in business intelligence reporting systems, the company said. It also detailed two new reporting tools – Crystal Vision and Crystal Vision Server – that will ship later this month.

■ PETER SAYER, IDG NEWS SERVICE

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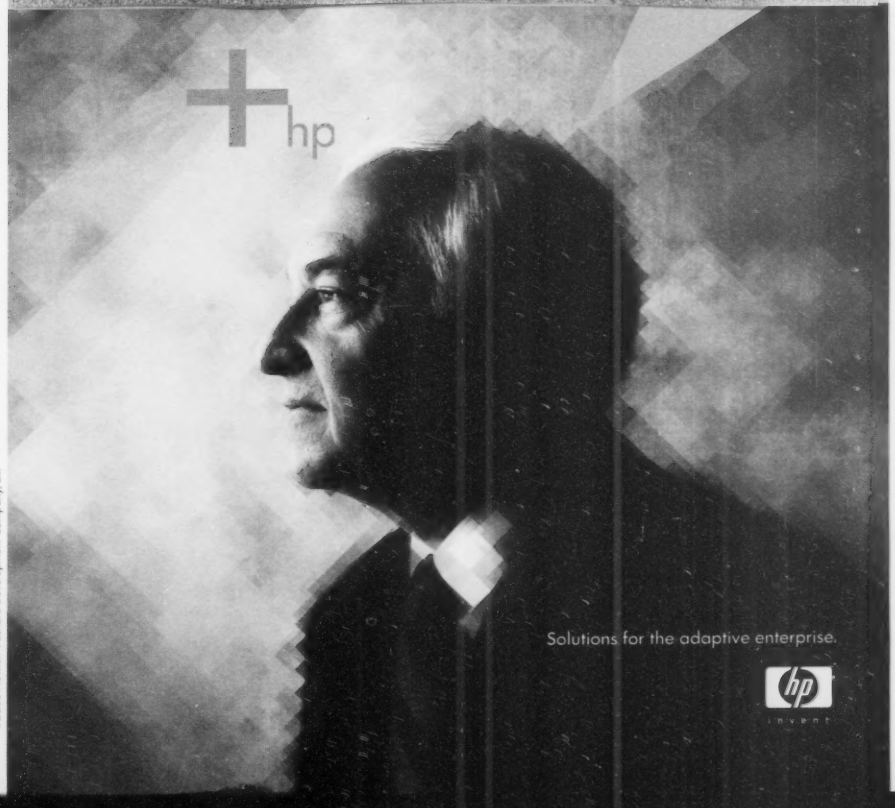

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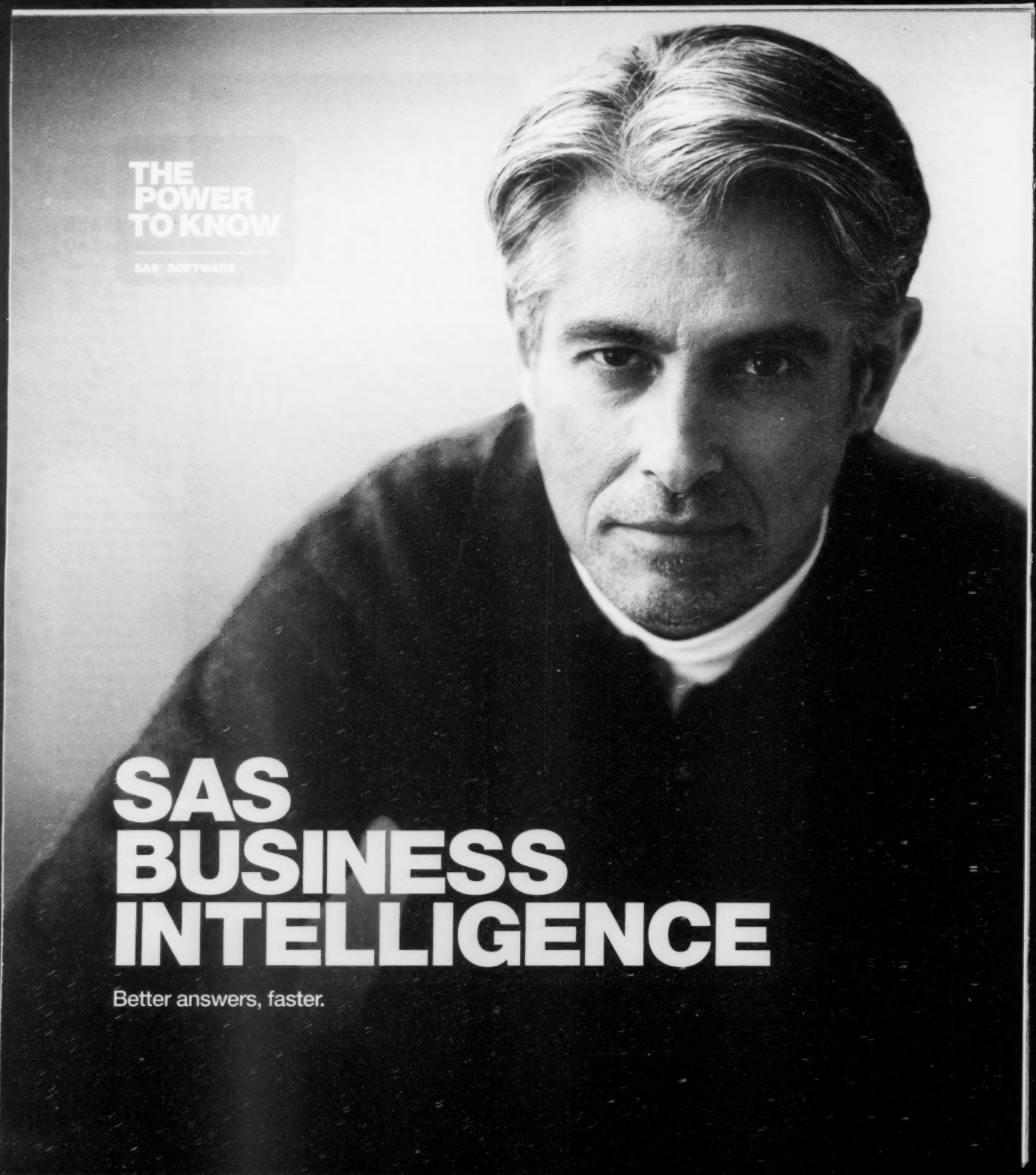
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Study Finds Sharp Rise in Mac OS X Flaws

BY JAIKUMAR VIJAYAN

Just because you use a Mac, don't think you're any more secure than a Wintel user.

A sharp increase in the number of flaws discovered in Mac OS X suggests that the operating system from Apple Computer Inc. may soon be every bit as prone to malicious attacks as Windows, according to a report released last week by the SANS Institute, a Bethesda, Md.-based security training and research firm.

Mac OS X is still safer than Windows because its smaller installed base makes it a less attractive target for hackers. But the number of flaws discovered in OS X is leaving its reputation as a secure alternative to Windows "in tatters," according to the SANS semi-annual update to its list of top Internet vulnerabilities.

"Users often feel invincible when they have their shiny silver-colored Apple and they are surfing the Web with it," said Ed Skodis, a director at SANS. But that may be a mistake, because "there's a significant amount of research going on for security vulnerabilities in the Mac OS," he noted.

Rising Tally

About 52 vulnerabilities were discovered in Mac OS X in 2005, and 17 have been uncovered so far this year, said Amol Sarwate, manager of the vulnerability management lab at Qualys Inc., a Redwood Shores, Calif.-based security service provider that contributed to the study.

The number of vulnerabilities reported last year was more than double the 2004 total of 24 flaws, Sarwate said. At least a third of the flaws uncovered over the past year or so were considered critical, Sarwate said. Within the past few months, Apple's Safari Web browser has also faced its first attack targeted at an unpatched vulnerability.

Apple's increasing market share and its decision to use Intel Corp. chips have drawn increased hacker attention to OS X, Skodis said. Similarly, Apple's new Boot Camp, which allows Intel-based Macintoshes to run Windows XP, has also raised its risk profile, he added.

Apple did not respond to requests for comment by press time.

The SANS study also showed that while the Firefox browser is still somewhat safer than Microsoft Corp.'s Internet Explorer, it's no panacea.

According to SANS, over the past six months, users of Firefox and Mozilla have had to patch a number of critical vulnerabilities. At the same time, there appears to be a significant decline in vulnerabilities being reported in Windows services. But that decline has been offset by a sharp increase in client-side flaws, Sarwate said.

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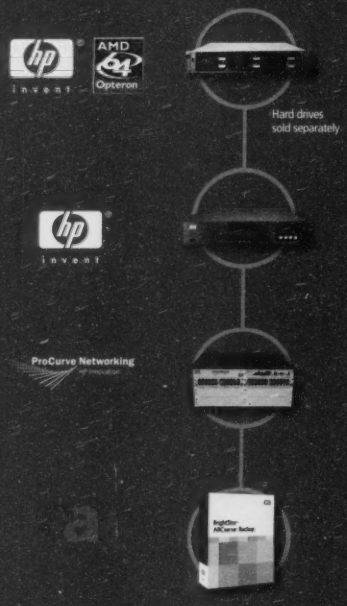

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Some Users Still Waiting for Oracle's April Patches

BY ROBERT McMILLAN

Testing problems are forcing some Oracle Corp. users to wait longer than usual for the company's latest round of security patches.

Though Oracle offered updates for a number of its most popular products in its April 18 critical patch release, fixes for some older products were postponed until May 1. The database vendor now says that many patches may not be available until May 15.

Oracle typically releases about 150 patches for a variety of operating systems in its regular updates, which ship every three months.

The problem with the April update is that some of the patches have not yet passed a suite of tests that Oracle uses to ensure that they don't disrupt other applications, said Darius Wiles, manager of Oracle Security Alerts. "There were some [updates] that failed out of the test suite, so we needed some more time to test them," he said.

Oracle is eager to release updates for some of the more widely used versions of its database, including Versions 8.1.7.4 and 10.1.0.4, Wiles said.

Users can find more information on the estimated delivery date of the patches by checking the preinstallation notes published by Oracle's online support service for each of its products.

Once Is Enough

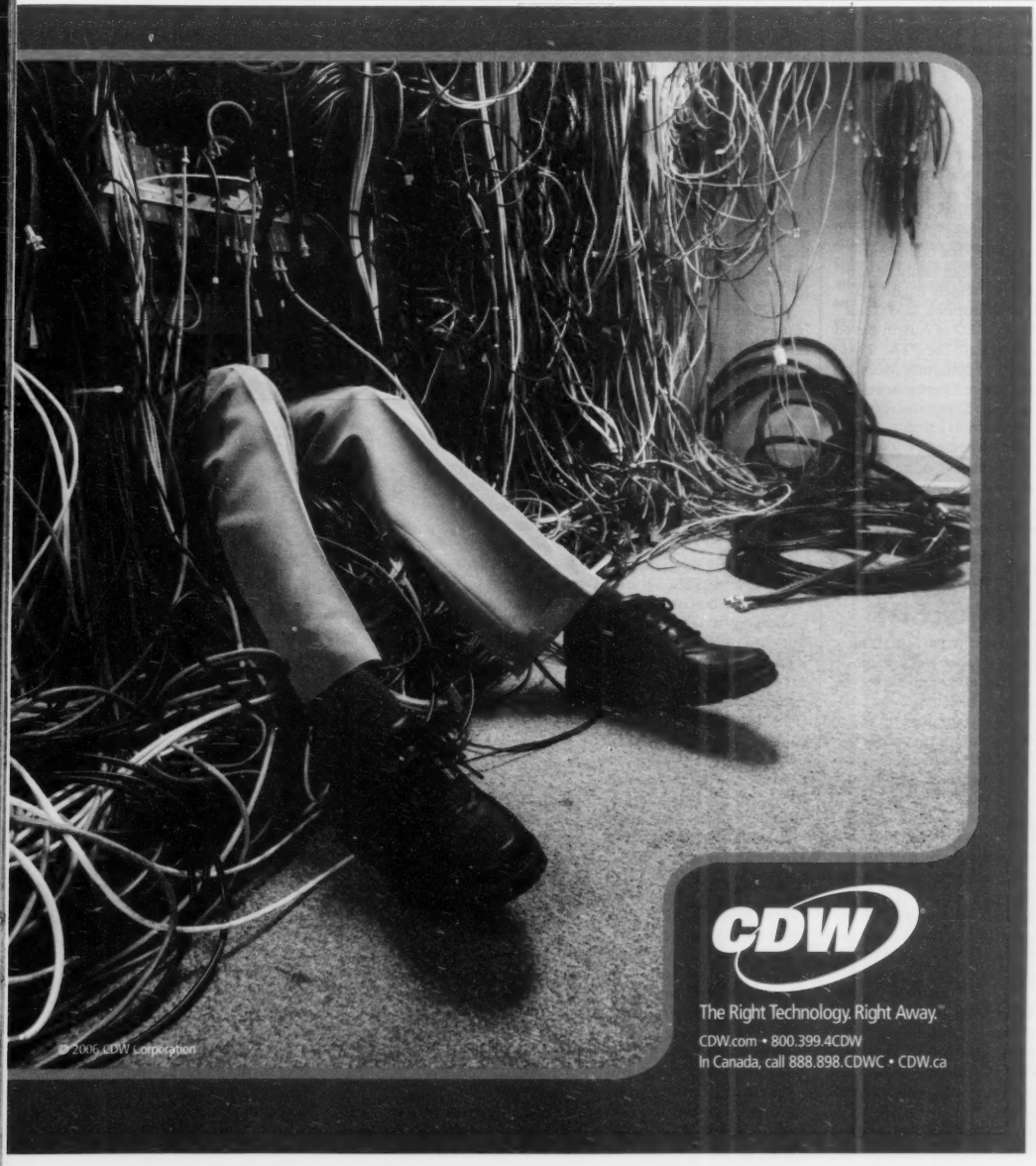
Security researcher and Oracle critic David Litchfield said that Oracle is undermining the value of its regular patch-release cycle by waiting so long to update the products.

"The whole point of a regular patch cycle is that people can plan ahead and install once," said Litchfield, managing director of Next Generation Security Software Ltd. in Sutton, England. "But if you have to install it nine times, where's the benefit of that?"

But Wiles countered that the problem is not as bad as it appears. Because some updates, such as those for Oracle's application server, are dependent on the database fixes, there has been a temporary bottleneck, he said. "Once we get the database stuff cleared, there are going to be a whole bunch of products that are going to be patched," Wiles said.

Though some security researchers, such as Litchfield, are critical of Oracle's delays, most customers prefer that the software vendor deliver a tested and reliable product, said David Kennedy, a senior risk analyst at Cybertrust Inc., a Herndon, Va.-based security services firm. "I'm sympathetic with Oracle," he said. "They get barbecued for not coming up with patches fast enough."

McMillan is a reporter for the IDG News Service.



Desktop Linux Is Still on The Outside Looking In

Shortcomings limit open-source software's appeal versus Windows

BY ERIC LAI
SAN DIEGO

AS THE speakers at the Desktop Linux Summit 2006 here last month looked out at their audiences, they couldn't help but notice that the number of attendees sporting T-shirts, sandals and bushy facial hair — the stereotypical look of Linux movement diehards — was much reduced from previous conferences.

Linux proponents may have grown more buttoned-down, but the open-source operating system is still well outside the mainstream — at least on desktops. Market research firm IDC expects about 9 million PCs running Linux to be shipped worldwide this year, amounting to less than 5% of the total market. And at the desktop conference, messages of hope about Linux's prospects were tempered with criticism of the often-quixotic strategies adopted by Linux proponents and vendors.

One problem is the mistaken belief that open-source equivalents can easily be substituted for widely used Windows applications, said Geoff Perlman, CEO of Austin-based Real Software Inc. "The mass majority of computer users are conservative," Perlman said. "They want to use the software they're used to using."

Dave Rosenberg, CIO at Glass, Lewis & Co., an investment research and shareholder proxy advisory firm in San Francisco, likewise pointed to the lack of fully functional applications as an issue that's holding back desktop Linux.

"Does OpenOffice meet my needs? Almost," Rosenberg said. "Does GIMP [an open-source photo editor] meet my needs? Same answer."

Rosenberg, who also works as an analyst at Beaverton, Ore.-based Open Source Development Labs Inc., added that improvements to Linux's hardware drivers and battery life are needed.

"My laptop running Ubuntu [Linux] only lasts half an hour," he said. "But these are solvable problems. We're getting there."

Rosenberg argued that Microsoft Corp.'s upcoming release of its Windows Vista client operating system will prompt many companies to seriously look at switching to Linux on the desktop.

> **Does OpenOffice meet my needs? Almost. Does GIMP meet my needs? Same answer.**
>
> **DAVE ROSENBERG,** CIO, GLASS, LEWIS & CO.

But Rob Enderle, principal analyst at Enderle Group in San Jose, disagreed with that contention. "You can't outresource Microsoft or outcompete them," he said, noting that PC vendors turn a profit installing Windows on their systems because of all the money Microsoft gives them from its marketing slush fund.

Microsoft also provides plenty of softer incentives to PC vendors, including sales support at large accounts, engineering assistance and help in making the drivers for peripherals work properly.

On the other hand, many PC makers dislike Linux because it doesn't sport a track record of encouraging users to upgrade their computers in regular three-year cycles, as Windows does, Enderle said.

"The PC guys live on churn, and Linux doesn't really change enough for them," he said. "That's theoretically good for IT managers, who would keep employees on the same hardware for nine years if they could. But it's bad for [hardware vendors]."

Dutch Bookseller Creates Item-Level RFID System

Can trace books from warehouse to store shelves

BY MARC L. SONGINI

Dutch book retailer Boekhandels Groep Nederland BV (BGN) late last month launched an item-based radio frequency identification (RFID) tag system at a new store in Almere, Netherlands.

Eventually, BGN will deploy the system throughout its 42 stores, which collectively carry about 2.2 million books on their shelves. Some 38,400 books have been tagged at the new store, and the company plans to expand the program next to a retail store set to open this October in the Dutch city of Maastricht.

Jan Vink, IT director at Utrecht, Netherlands-based BGN, said that the RFID system is budgeted at $650,000 and that each of the passive tags being affixed to books will cost about 12 cents.

The software used for the project's transaction processing, data processing and integration requirements was licensed from Progress Software Corp. in Bedford, Mass.

The system will track a book's shipment status from the warehouse until it arrives at the store. Vink said the expected benefits include cutting the time it takes to fulfill orders and making it easier to locate books on store shelves.

100% Reliability

BGN has been planning the system since 2003, and work on the project began about two months ago. The company had waited until the latest generation of RFID technology was developed and could guarantee 100% reliability for tracking processes, Vink said.

BGN has long used bar-code technology to track books. But with the bar-code system, it takes store workers five to seven minutes to scan all the items in a box of 50 books. Using the RFID technology, each box can be scanned in five seconds, Vink said.

The new system also cuts the delivery time for out-of-stock books in half, to two days.

Brian Hume, an analyst at Martec International Inc. in Atlanta, said the item-based RFID system can make every part of a retail book business more efficient. For example, he said, the system can reduce lost sales in stores due to book misplacement or theft and help finance department personnel in invoicing tasks.

"The smart thing this company has done is to examine all their supply chain and in-store processes and use the technology to optimize them," Hume said.

Ubuntu Linux Vendor Plans Upgrade, Corporate Push

SAN DIEGO

UBUNTU LINUX has gained more than 2 million users worldwide since its release in October 2004, according to Canonical Ltd., a small vendor on the Isle of Man that oversees the software. Most are home users. But at the Desktop Linux Summit 2006, **Jane Silber**, Canonical's chief operating officer, spoke with *Computerworld* about the company's efforts to increase Ubuntu's corporate appeal.

How is Ubuntu faring among business users? One of the reasons we delayed the release of Ubuntu 6.06 by six weeks, until June, was because we plan to support it for three years on the desktop and five years on the server. And that decision was driven by requests from businesses. Both the PC vendors and business users wanted a longer support cycle.

We see interest growing. Our biggest customer is the Andalusian regional government in Spain. That's hundreds of thousands of desktops. We have some deals with banks and retailers that I can't disclose right now.

Did you decide to develop what you're describing as the first enterprise-ready version of Ubuntu because Microsoft is preparing to release Windows Vista? In theory, it's important. When people are thinking about whether to upgrade to Vista or choose an alternative, we want to be out there. It really is a decision point for users. But I can't take credit that we had this all planned out. It's really because the technology was ready.

Is your business model similar to the ones at mainstream open-source vendors, such as Red Hat? In a sense, but not completely. We believe software should be free to anyone. If you want to buy a support contract, it is there for you. [But] there is no premium version [of Ubuntu] that costs money.

We're also happy for you to get support from someone besides us. We list companies on our site that provide that – we're up to 200 around the world. Some customers buy support just from [another] firm, others buy it with escalation support from Canonical. That way, a local company will provide front-line support. But for really hard problems, they can escalate trouble tickets back up to us.

– ERIC LAI

Dell Storage Chief Unruffled by EMC-Intel Pact

BY LUCAS MEARIAN

Praveen Asthana, *director of Dell Inc.'s enterprise storage unit, said EMC Corp.'s recently signed multiyear agreement to let Intel Corp. sell low-end EMC storage arrays likely won't affect his company's similar longtime contract with the Hopkinton, Mass.-based storage vendor.*

Analysts, however, say a conflict between Dell and EMC is likely as the latter continues to drive its own low-end product line — until now Dell's bailiwick. In an interview with Computerworld, *Asthana discussed the EMC moves and other storage issues facing the PC maker.*

How will EMC's resale partnership with Intel affect your relationship with EMC? EMC has a number of partnerships with other resellers. Every time they add one doesn't mean we're headed for a divorce. We believe the relationship between Dell and EMC is extremely healthy. We're serving the customers very well jointly, and the momentum, as far as I can see, is actually increasing.

Do Dell and EMC target different customers for low-end arrays? Absolutely not.

Do you ever compete directly with EMC – do you ever find members of your sales staff in the same room with EMC sales representatives? It's certainly possible, but I don't have information on that. One thing that's important to understand is where we primarily have success is with the Dell server installed base. The rep who has a relationship with the customer says, "Let me tell you about this storage we have."

Q&A

Now, there are other operating systems, like Unix, and other server customers, but I think we do very well sticking to our Dell server installed base.

Does Dell have any plans to sell storage-area network technology in the future? Our main goal here is to meet the needs of the customer, and we continue to focus on doing that in the best possible way. We have a very strong relationship with EMC that gives us the products we need to meet those needs.

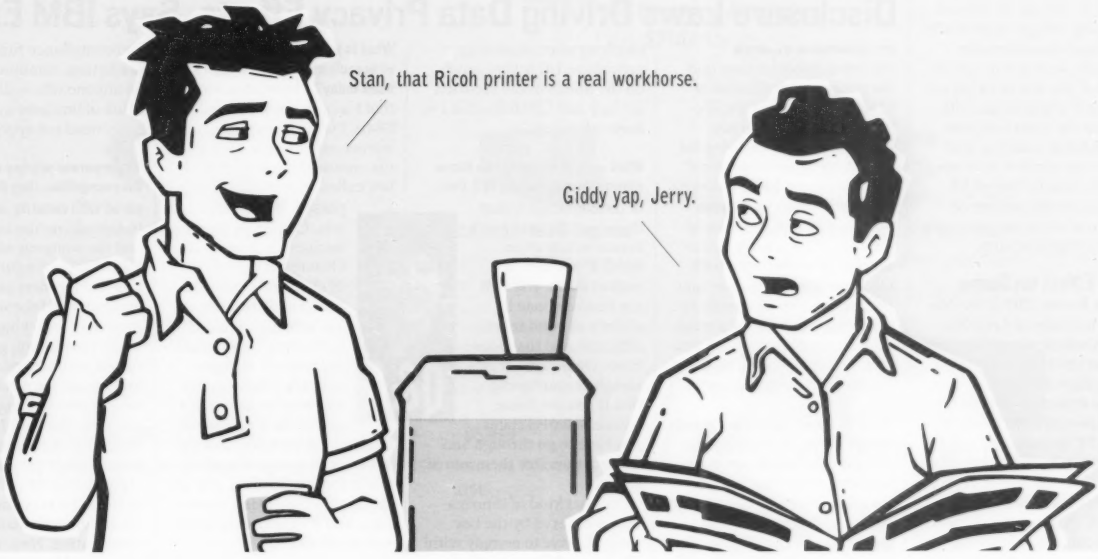
Does that mean Dell has no plans to sell that technology? I can't speculate on the future, but I can tell you right now we have a good relationship with EMC to meet the needs of the customers.

What are Dell's plans for network-attached storage, and do you see the company getting into enterprise-class products with multiple protocols, such as iSCSI and Fibre Channel? I am not going to comment on future product directions. As our customers demand certain products, we will see how we can meet their needs.

Does Dell's continued migration upward and EMC's move toward the low end indicate that some future friction is likely? I think we're serving the needs of the customer jointly. The customer's needs are changing in many dimensions. Customers today are having more and more storage needs.

The higher-end customers really want the simplicity afforded by storage consolidation. The midrange customers are looking for more sophisticated storage products also.

When we're increasing our product capabilities, it's not necessarily that we're only going after higher-end customers. The customer needs are increasing in lockstep, and we're trying to meet those needs. ▸



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European Hazardous Component Ban to Affect U.S. IT Operations

July 1 deadline is forcing some vendors to adjust product delivery schedules

BY PATRICK THIBODEAU

VENDORS ARE scrambling to meet the July 1 deadline set by a European Union law that bars the import of several electronic components containing lead, mercury, cadmium and other substances.

The European Commission (EC) directive on the restriction of hazardous substances, or RoHS, and similar statutes in other countries — including one due to take effect in China next year — will affect IT operations and technology vendors worldwide, analysts said.

No such restriction is currently planned in the U.S. However, U.S. users will end up buying compliant products from large manufacturers that don't want to run two assembly lines, one spewing out electronic components with lead and the other lead-free.

In addition, analysts said technology vendors may accelerate product end-of-life announcements as they develop new versions containing RoHS-compliant parts.

Little Effect on Some

Robert Rosen, CIO of the National Institute of Arthritis, Musculoskeletal and Skin Diseases at the National Institutes of Health in Bethesda, Md., said he expects that the European law will have little effect on his IT operations.

Rosen, who is also president of the Share IBM user group, said his organization is using Dell PCs that are already RoHS-compliant and have caused no problems for users. On the whole, Rosen said he supports the EC effort. "From an environmental standpoint, it's a no-brainer," he said.

Similarly, Bill Morgan, CIO at Philadelphia Stock Exchange Inc., said RoHS compliance is "more of a problem for the computer manufacturer than for the end user like us."

The stock exchange is a heavy user of servers from Sun Microsystems Inc. Because Sun sells a wide variety of products, "we will have choices even if some older, noncompliant products are discontinued by Sun," Morgan said.

Industry watchers nonetheless warned that IT operations shouldn't ignore the emerging laws. "If you are a large multinational, you have to watch those end-of-life announcements," said Debbie Cote, a principal at PRTM Management Consultants LLC in Waltham, Mass.

For instance, fault-tolerant computer maker Stratus Computer Systems, which does about one-third of its business in Europe, is moving up the announcement of an end-of-life timetable for its ft6600 system. Stratus had planned to announce a schedule by the end of this year, but it's moving that up to an as yet undisclosed date because of the European directive, said Denny Lane, marketing director at Stratus in Maynard, Mass.

Dan Shea, chief technology officer at Celestica Inc., an electronics manufacturer in Toronto, said vendors also face uncertainty as they switch from lead-based alloy solder that doesn't comply with the EC law to RoHS-compliant silver, tin and copper alloy, which is becoming more widely used. Although the new alloy has been tested extensively and so far has performed as well as or better than lead-based solder, "we have very little field data on the solder formulation that we are using," Shea said.

Industry concerns about lead solder substitutes prompted the EU to allow a temporary exemption for high-end IT equipment, if vendors request it. Nevertheless, Shea still suggests that IT operations switch to the new technology as soon as possible to ensure long-term support for their hardware.

> **"[RoHS compliance is] more of a problem for the computer manufacturer than for the end user like us."**
>
> **BILL MORGAN,** CIO, PHILADELPHIA STOCK EXCHANGE INC.

Sun, Hewlett-Packard Co. and IBM declined to provide details of their plans to comply with the EC law, though all said they will meet its requirements.

"Whether that's true or not, we will just have to wait and see come the [deadline]," said Chris Ingle, an analyst in IDC's London operation. Ingle did note that European companies are starting to require RoHS compliance in requests for proposals. ▸

Disclosure Laws Driving Data Privacy Efforts, Says IBM Exec

BY JAIKUMAR VIJAYAN

Breach-notification laws and the growing globalization of business operations are forcing U.S. companies to pay more attention to ensuring the security of sensitive personal information under their control, according to **Harriet Pearson**, *vice president of corporate affairs and chief privacy officer at IBM. In an interview with* Computerworld, *Pearson said that minimizing those risks is a challenge that requires a cross-functional effort involving security, technology, legal, auditing and marketing organizations.*

What's driving the privacy agenda today? CIOs, security people and privacy people are now working closer than ever before. The precipitating event has been this requirement that started in California and has now appeared in about 25 states to disclose to consumers if there's a security incident that potentially compromises data about them. That simple thought [is] differently expressed in different laws, but [it's] now becoming pretty much standard operating procedure. [It] is very much on the minds of the security, privacy and CIO folks that I've been talking to.

What sort of challenge do these requirements pose for IT? Part of the challenge is that there are 25 states [with breach-notification laws]. If you look at each of them, you will see that each one is slightly or significantly different, and that does cause challenges. It creates the requirement that if you are doing business across states, you have to go through and try to rationalize them across states.

So what kind of information is covered by the law that you have to comply with? There are different definitions of personal information across states. The triggers that require you to notify differ across states. And you have to figure out what the company is comfortable with using as a trigger.

What is your personal opinion of breach-notification triggers used today? I have an analogy that I use. In the 1980s and the 1990s, I was an environmental lawyer, and I was in California around that time when a law called Proposition 65 was passed. What happened was, California required businesses to make disclosures of the release of chemicals and stuff like that. When you are actually required to disclose those kinds of things, it changes people's behavior. But you want to be careful and strike a reasonable balance. I don't know exactly what the language should be. If it is too [restrictive], you are going to get too many warnings, and it's going to result in overnotification.

What makes a good privacy officer? Multidisciplinary thinking and attitude. Why do I say that? Because you have to work very closely with and understand the world of the CIO, the security officer, the risk and compliance function, legal, marketing, communications. So anyone who is disposed to think of business in a silo mentality need not apply.

Do corporate privacy officers get the recognition they deserve compared with security managers? It depends on the individual and the company strategy. I do think that when things change, it falls on leaders inside companies to lead the way. So instead of worrying about how much respect you get, I would turn it around, and my attitude and my advice would be [to] look at the challenges posed by a globalizing world, a world in which lots more data is under your management and where the expectation is that you are going to be very transparent about how you manage the information. Now, take those forces and be strategic in how you help your company meet its objectives. And I dare say you'll be respected, because every company probably wants, as part of its objectives, to deliver a consistently excellent experience. ▸

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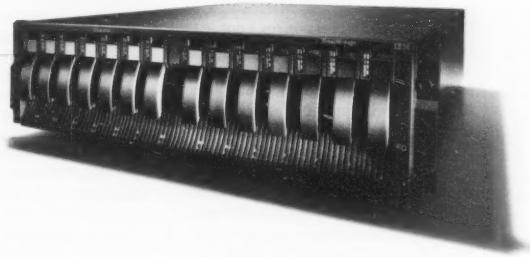

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DON TENNANT

Rotten Effort

IT'S BAD ENOUGH when Microsoft strong-arms other software vendors into submission as a means of thwarting competition. But when it engages in underhanded tactics to intimidate users in order to land a software deal, we have a very disturbing situation on our hands. And someone needs to have the guts to speak out about it.

DON TENNANT is editor in chief of *Computerworld*. Contact him at **don_tennant@computerworld.com**.

Fortunately, someone has. Last week, Dale Frantz, CIO at Auto Warehousing Co., brought to my attention an alarming business practice that shows Microsoft at its shoddy and arrogant worst.

AWC was contacted several weeks ago by Janet Lawless, a software asset management engagement manager at Microsoft, who claimed that "a preliminary review of [AWC's software licensing] information indicates that your company may not be licensed properly." Lawless urged AWC to "understand that the potential inconsistency in licensing is an urgent matter and needs immediate attention." She wanted to send a consultant to AWC to conduct an inventory of its installed software.

Frantz was stunned. He says he always errs on the side of caution with respect to software licenses. He does regular audits and maintains extensive records of purchases, license keys and registration codes. Frantz had no doubt that he was 100% compliant. When he told Lawless that, she ratcheted up the threatening tone of her e-mail correspondence.

"Simply commenting on your licensing environment does not address our concerns in a tangible, proven manner," she wrote. "We continue to believe that Auto Warehousing may not be licensed properly. Since this is a compliance issue, I am obligated to notify an officer of Auto Warehousing of the situation and the significant risk your organization may be subject to by not resolving this situation in a timely manner."

At that point, Frantz got his corporate attorney involved. The attorney suggested that an olive branch be proffered to avoid legal action, so Frantz offered to send Lawless detailed records of all purchases of Microsoft software in the past five years. But Lawless blew that off as well. She seemed determined to get a consultant into the IT bowels of AWC.

"Thank you for your offer to send your purchase records to me," she wrote, "however our Software Asset Management (SAM) program is the only unbiased way to create an accurate baseline and resolve this matter."

That did it. Frantz informed Lawless that he wasn't going to waste anymore time with her, and he left the matter with his attorney. The attorney, suspecting that Lawless' actions were part of an elaborate sales effort, basically told her to back off.

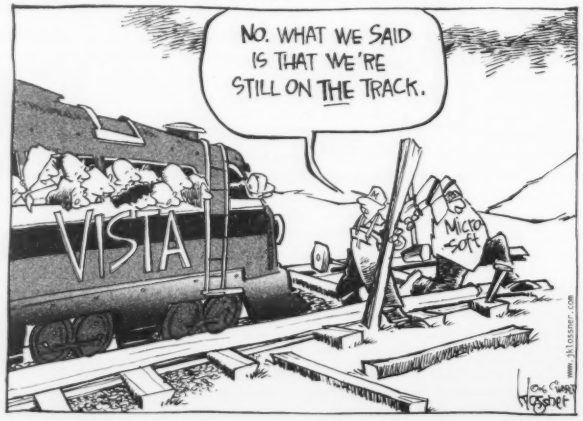
Indeed, according to Microsoft's Web site, the responsibility of someone with Lawless' title of "engagement manager" is to "perform as an integrated member of the account team, drive business development and closing of new services engagements in targeted accounts." So why was someone in a sales position leaning so hard on AWC about a supposed licensing compliance concern?

When I phoned Lawless to find out, she referred me to Microsoft's PR machine. The responses I got through that channel stressed that Microsoft's aim is to help customers navigate the complexities of software licensing and that one of the roles of engagement managers is to assist in that effort by informing customers of a potential licensing risk. I was told to attribute the responses to Lawless.

The fact is, if Microsoft really has reason to believe that a company is using unlicensed copies of its software, it sics the Business Software Alliance on the company. It doesn't turn the matter over to one of its sales managers.

The folks at Microsoft should have done their homework. They would have realized that trying to intimidate Dale Frantz would be a fruitless effort. And what a rotten fruitless effort it was.

Don Tennant



DOUG LEWIS

This CIO Can Be Saved

FIRED CIOs are like dead armadillos alongside a dusty Texas road. There are far too many of them!

Very few are truly incompetent. Some get fired because they cross wires with their bosses, some can't seem to communicate with their customers, some can't link IT initiatives with the business strategy, some don't grow their people, and some have weak political skills.

Unfortunately, few CIOs are aware of their own shortcomings, even those that threaten their jobs. Many are totally stunned when they are fired.

DOUG LEWIS is a CIO mentor as well as founder and senior partner of The Edge Consulting Group LLC. He can be reached at **edgeconsulting@bellsouth.net**.

The incompetents need to go elsewhere, but it's in a company's best interest to salvage those CIOs who aren't incompetent.

Why? Firing a CIO is costly to the business in several ways. The most obvious cost arises from recruiting a replacement. When too many CIOs cycle through a business, it poisons the water, and new high-quality candidates get very hard to find. Less obvious is the "dead time" while the new CIO learns the business and establishes relationships with his customers and the business leaders. There's usually a negative impact on the morale of the IT organization, which harms ongoing projects, and the CIO's boss loses some political capital.

So, how do you salvage the CIO?

The first step is for the CIO, the CIO's boss, a member of the senior management team or a board member to recognize that there's a problem before it's too late and initiate corrective action. The next step is to bring in an outsider — hopefully an experienced CIO mentor with real-world CIO experience. This is *not* a

role for the typical consultant.

The CIO's boss should express to the CIO that the company is committed to working through problems with him. He should also explain the role of the CIO mentor, stressing that fixing the problems is key to the CIO's long-term success in the company.

Then I would expect the CIO mentor to go through a process resembling the following:

1. Interview members of the senior management team. Determine their expectations for the CIO, how IT supports the strategic plan for the business, their specific criteria for success for this individual, and their current assessment of the CIO's performance against their criteria. It is telling if they can't easily reel off this information. Lack of a considered response to any of these items points to a huge breakdown in communication between top management and the CIO. If the CIO's boss isn't on the senior management team, ask him the same questions.

2. Interview five to 10 key IT customers with completed and in-progress projects. Ask them how satisfied they are with IT's work. Look for specifics directed toward the CIO personally, both good and bad. Ask how well the CIO seems to understand their part of the business.

3. Interview the CIO. Ask him how well his organization understands and supports the business strategy. Ask him if he has an IT plan. Talk about the plan enough to get a good feel for whether it dovetails with the strategy described by senior management. Look for disconnects. Look for senior management sign-offs on the plan.

Ask the CIO about his success criteria and how well he's doing against them. Look for disconnects between his view and those of his superiors. Ask him to pull out a list of ongoing projects and project plans. Look for the usual programmatics of schedule, budget, actuals, milestones and projections. Also, look for customer buy-in and milestone sign-offs.

If any of these are missing, there are strong possibilities of serious project-management breakdowns.

4. Interview key members of the CIO's staff. Let them know that the senior management team wants to know about and fix problems between IT and the business. This is a good opener for the discussion. Ask for examples of where thing are going well and badly. Look for those things that the CIO personally influenced. Ask about the state of relationships between IT and the business. Ask to see their success criteria and their performance against the criteria. Ask how IT fits into the overall business strategy.

5. Put the findings into a brief written report no more than four pages in length. It should include a short set of recommendations.

6. Brief the CIO's boss and the CEO on the findings and recommendations. If the problems are so severe that there aren't any realistic long-term expectations for the CIO, that fact needs to be expressed upfront. If there are fixable problems, these need to be outlined, along with an approach to fixing them.

Next comes the mentoring. It can be time-intensive at first. The CIO and the CIO mentor need to allocate a couple of days a week for the first month or so. After the CIO is out of "intensive care," face-to-face sessions can be cut back to one day a month, with phone calls as required to talk through problems. The CIO mentor needs to check back on a regular basis with the senior management team, key customers and IT staff members to get their feedback on the CIO's progress.

I've seldom seen a situation in which the CIO is totally at fault. Most bad situations feature a senior management staff with little clue as to what the CIO actually does and even less as to what the CIO could do to enable the business strategy. The CIO mentor can play a role here in addition to acting as an "honest broker" in representing the CIO in a better light to the senior management team.

A typical bad situation also usually features a weak strategic business plan or, in many circumstances, the complete absence of a plan. A senior and experienced CIO mentor can play a role in coaching the senior management team in creating a meaningful strategic plan and engaging the CIO in its creation.

I am convinced that most CIOs can be salvaged. A good mentor, process, commitment, assessment, hard work and follow-up are the keys. ▸

MICHAEL GARTENBERG

IT Has a Place in the Origami Fold

A FEW WEEKS AGO, Microsoft launched a new class of devices called Ultra-Mobile PCs, also known as Origami. Most of the buzz around these UMPC devices concerns consumer usage, but there are reasons for business users to look at them as well.

Origami devices are small PCs optimized for mobility. They have screens of just 7 inches or less and feature multiple input options: touch screen, pen and directional pad. Most units will also have a thumb-type mouse for pointing, and they will have dedicated buttons for common functions such as scrolling or changing device settings.

But these are no mere PDAs. They run Windows XP Tablet PC Edition, making them full-fledged Windows computers.

You might think that you've seen this all before. After all, there have been lots of little computers that run Windows XP, such as the Sony U series, the Toshiba Libretto and the OQO. Those machines, although wildly popular with the Japanese mainstream and U.S. geek markets, have never taken off in the U.S. in a big way. One reason is that taking Windows and shrinking it down to fit into a handheld device doesn't make it more usable; in fact, it makes it less so. Another is that making smaller machines means a higher price, but the preference in the U.S. is to pay a premium for things that are larger, not for smaller, less-functional ones.

MICHAEL GARTENBERG is vice president and research director for the Personal Technology & Access and Custom Research groups at JupiterResearch in New York. Contact him at **mgartenberg2@optonline.net**. His weblog and RSS feed are at **http://weblogs.jupiterresearch.com/analysts/gartenberg**.

UMPCs are different from earlier offerings in several ways, however. First, by adding a touch screen and introducing a new way of interacting with the device and entering information, Microsoft has gotten past the problem of keyboards that are too tiny for extended use.

Second, Origami puts a new customizable Program Launcher on top of XP. Microsoft realized that what works on a 17-inch PC screen, usually viewed from about 2 feet away, isn't ideal for a 7-inch handheld screen, usually viewed from about 10 inches away. This customizable interface allows users to get faster access to information and applications. Finally, because its designers have focused on what could be delivered using today's technology, Origami devices will be priced at between $500 and $1,000. Such prices will make a major difference in terms of who can afford these machines, and those prices will only go down over time.

Origami may appeal to business users who think in terms of what usage they really need from the devices they carry. While they aren't pocket-size devices, Origami units by design are small enough to be kept close at hand, but as a PC-based platform, they're capable of a lot of functionality and offer a no-compromise solution for most applications.

There are a lot of business scenarios where Origami's level of functionality and mobility will make sense for users. Will it be the most powerful PC you own? No, but the PC you have at hand is better than the best machine you leave behind.

You're not going to be able to pigeonhole the applicability of Origami for your users. Road warriors are probably going to need a full-size laptop with its big screen and standard keyboard; Origami just won't fill the bill for them. But for other users, it might make sense to skip buying a high-end laptop and instead opt for a more powerful desktop as well as an Origami for managing e-mail and accessing Office documents on the road.

I'm not saying that the first UMPC devices coming to market are perfect. Battery life needs improvement. The devices could be smaller, and they could also use cheap 3G products for connectivity, as well as higher storage capacities. Those are things that can be worked out over time, as the devices' makers ride the technology curve toward greater utility.

But already, Origami devices are something that IT needs to take a closer look at. The key is to view this technology the way you would any new platform rather than to assess the value of a particular machine today. ▸

ANOTHER OPINION COLUMN AND READERS' LETTERS APPEAR ON PAGE 30.

SANDRA GITTLEN

The Other Networking

I'VE ALWAYS BEEN a big proponent of networking — the human kind, that is. There's a lot of value to be gained from sharing ideas with your peers, experts in the field, analysts — just about anyone whom you might take the time to talk with.

That's what I miss most about the dot-com era. IT executives had budgets and enough staff to take the time to go to conferences, meet with others in the industry and brainstorm some fantastic ideas.

Today, everyone is tight on cash and even tighter on time and personnel. That means idea sharing is benched in favor of staying in your cubicle and getting the work done. While I believe in doing one's job, I think we all miss out on opportunities when we're stuck in the daily grind and not allowed to get a glimpse of what lies beyond our four partition walls.

Sending a team member to a conference like Interop or Storage Networking World can reap significant benefits for an organization — well worth the time out of the office and the pinch the expenditure has on the budget.

Consider this scenario: Your team is thinking about rolling out a storage-area network. Typically, you'd put out a request for proposals, wait for vendors to steer you in the right direction and hope to hit pay dirt.

What's missing from this approach is any knowledge about what your peers have tried — and possibly failed at. Going to a storage conference where you talk to folks in between sessions and during mealtimes, or even during cab rides to and from the hotel, can put you in a much better position to weigh your options. Conferences present the opportunity to migrate toward people who are in industries similar to yours and who have already gone through the implementations you're considering. A true networker will grab a person's card and make sure to stay in contact as he goes through his own rollout.

There are other venues for networking besides conferences, such as local user groups for various technologies. If you meet periodically with your peers at a Microsoft Windows user group, for example, you can talk about the latest patches, updates and projects. This is a great way to get to know your peers so you can hit them up for advice later.

You can also stretch a bit and go to lectures put on by local universities or publications. For instance, *MIT Technology Review* in Boston hosts a variety of informational get-togethers and conferences. Your vendors might have insight into what local gatherings are available.

SANDRA GITTLEN is a freelance technology editor near Boston and a former events editor and writer at *Network World*.

If you really can't leave your desk, then join online user groups and mailing lists that keep you in the loop on your technology of choice. If you're worried about your in-box filling up with useless banter, filter the messages to a folder and take time each week to leaf through them. You're sure to find streams that follow a technology you're interested in. If there's someone you notice who is particularly knowledgeable on a topic, send him a note and introduce yourself. Most people would be flattered to share their experiences with you.

A final alternative is to make sure you tune in to webcasts or podcasts. Sometimes they allow for questions that enable you to gain insight into tricky technologies. They also offer information afterward about how to contact people for more information.

The important thing with all networking is to be an active participant. If you engage in any of these activities but don't take the initiative to introduce yourself, you'll miss an incredible opportunity. You'd be surprised how much you have to share and what a mentor you could prove to be to someone else.

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READERS' LETTERS

Weighing In on the H-1B Visa Controversy

DON TENNANT seems to think that IT professionals against the H-1B program are xenophobic or afraid to compete for IT positions ["H-1Being Professional," March 27]. This conjecture is completely wrong. Enlightened IT professionals are against the H-1B program because it distorts the proper functioning of the labor economy.

Rather than causing salaries to rise with shortages of labor, and therefore encouraging more people to enter the IT market and creating a healthy and vibrant labor economy, the H-1B program instead stifles salary growth and replaces native labor with foreign labor that is essentially indentured servitude (because the employees are required to remain with a specific hiring employer). That in turn encourages native labor to stay out of the market. It is obviously much easier to train and get a job in a less competitive market – particularly one that has not been distorted by labor that is 15% to 20% below market value.

Keep in mind also that the vast majority of H-1B labor is imported by headhunters, brought into this country without an already assigned position, forced to pay for their visa – which is against the law – and in many cases, mistreated. Over the past year, the Department of Labor, which has done little to go after these criminal operations, was finally able to corral a few of these bad actors and fine them millions. If it had looked a little harder, it would have been able to find many more violators.

Lastly, the H-1B program is commonly stated to have protections against the replacement of American workers. In fact, hundreds of thousands of American workers have lost their jobs to H-1B competitors, and many have had to train their replacements.

Until this program is ended or, better yet, criminalized, then IT employees would be well served to learn about this program, complain about its continued growth and do whatever they can to make its supporters uncomfortable.

Walt Crosby
Chief architect, Everyday Wireless, Concord, Mass.

H-1B EMPLOYEES are *not* usually the best and the brightest that the world has to offer. They are, however, cheaper than their American counterparts. They are not given benefits, are expected to work outrageously long hours, are barred from seeking employment with firms other than the one sponsoring their work visa and often must have the sponsorship fee deducted from their salaries.

Am I supposed to be happy about competing for the lowest wage possible? It is one thing to offshore, but to have the offshoring right to your front door is a real kick in the teeth.

Joseph Taranta
Senior systems programmer, Hoffman Estates, Ill.

I WAS BROUGHT in to manage 25 developers, half of them H-1Bs, while the regular manager was on a special project. Having access to their rates, I saw that the H-1Bs were making a third of what the American consultants on the team were making. When you can get three-for-one pricing, that extra 50,000 H-1Bs would put 16,667 Americans out of work.

Joseph Scheible
Plano, Texas, joescheible@comcast.net

TENNANT'S ARTICLE was interesting but biased in favor of the managers who want a quick and dirty resolution to their operational budget problems while contending with politically driven project target dates.

In my 30 years in IT, I have seen politics infest the IT environment. I have seen managers who didn't have the backbone to tell upper management that projects couldn't meet their unrealistic expectations. Unfortunately, the response of management has been, "How much is it going to cost?" This attitude has led to classifying the IT worker as a disposable commodity and to teams of cheap workers being brought in to work very long hours. In the process, consulting firms in India have become rich, and American workers have become displaced.

Lawrence M. Wical
Cincinnati

MY COMPLIMENTS to Tennant on his editorial and for recognizing that the U.S. can't eliminate competition from foreign companies and workers, either here or overseas, any more than we can turn the Internet off at U.S. borders.

I also want to thank Tennant for recognizing the Innovation Institute that we are assembling. Hopefully, this will help high-tech workers in the U.S. become more innovative, and perhaps more entrepreneurial.

Chris McManes
Senior public relations coordinator, IEEE-USA, Washington

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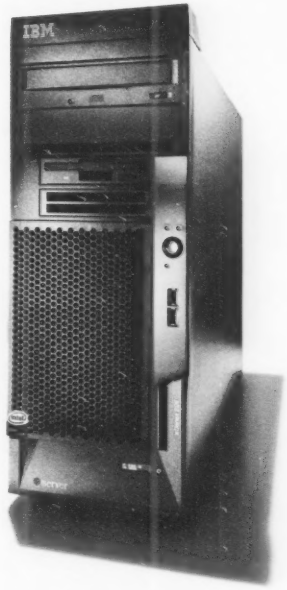

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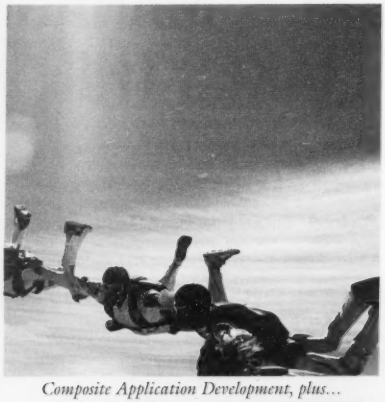

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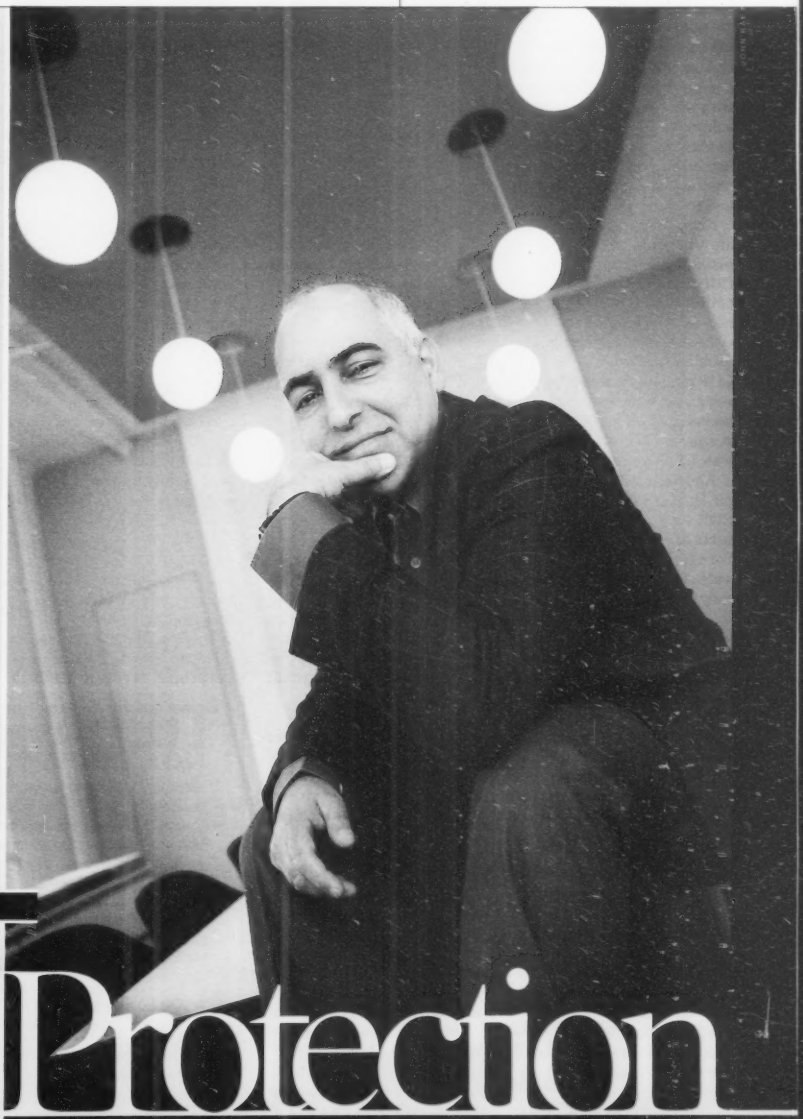
Q&A
Making the Most of IT
Professor Stéphane Gagnon discusses the alignment of IT with business processes and why companies need to use more of the capabilities of the technologies they have. **PAGE 38**

SECURITY MANAGER'S JOURNAL
Offshore Security Is Out Of Sight, Not Out of Mind
Mathias Thurman embarks on a trip to observe his company's overseas operations and educate the offshore workforce about the need for good security practices. **PAGE 44**

OPINION
Progress, Prosperity and The Cyberinfrastructure
Arden L. Bement, the director of the National Science Foundation, lays out the arguments for building a cyberinfrastructure. **PAGE 46**

REAL-TIME Protection

Companies using continuous data protection don't worry about lost data and say backup and restore are easier than ever before. **BY GARY ANTHES**



ON SEPT. 11, 2001, EvansonBest LLC lost communications between its remote sites and its Manhattan data center, but that was just the beginning of the furniture distributor's woes. Eight months later, there was an explosion in its New York headquarters and computing operations had to be suspended while the building was evacuated. It seems a vocational school operating out of the basement was teaching welding, but "apparently not very well," according to IT Director **Martin Silverman** (right).

Then, what's become known as the Great Northeast Power Blackout of 2003 turned off the lights at EvansonBest. It was getting a little tiresome, Silverman recalls.

Each outage caused processing delays and raised questions about the adequacy and timeliness of the company's periodic tape backups. And users squawked if they had to go without e-mail for as little as an hour. The solution: continuous data protection (CDP), a relatively new industry term for continuous, real-time backup of data to disk.

Now, EvansonBest uses WANSynch High Availability from XOsoft Inc. in Waltham, Mass., to continuously replicate data from New York, via a virtual private network, to its backup data center in Albany, N.Y. If a Microsoft Exchange e-mail server in Manhattan goes down, an Exchange server in Albany with a mirror of the database fires up and redirects users to itself. When the Manhattan server comes

back up, the Albany server replicates the e-mail that it processed during the outage back to Manhattan. No mail is lost, and users don't experience a disruption in service.

"It's peace of mind," Silverman says. "That's what you are buying with these things."

New Level of Protection

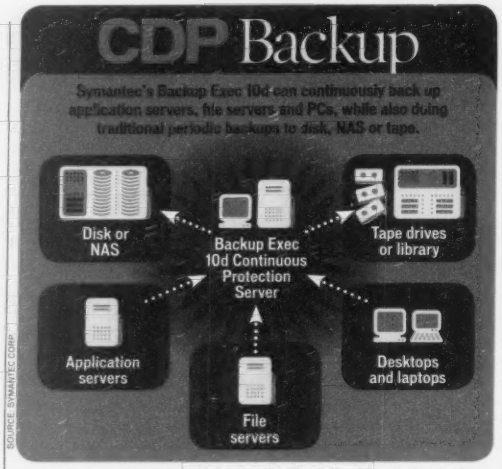
For years, IT shops commonly ran incremental backups to tape at night and full backups to tape over the weekend. But with the demands from data volumes soaring and disk prices plummeting, virtual tape and other disk-to-disk alternatives appeared, making backup and recovery easier and faster.

Now, although tape backups are still commonly done for disaster recovery purposes, CDP is taking the advantages of disk-to-disk backups to a new level. Instead of taking system snapshots at intervals, usually measured in hours, CDP products generate continuous, real-time backups. Your server crashed at 10:17:00 this morning? No problem: Restore your database to 10:16.59.

And because there is no physical handling of tapes with CDP, some products allow end users to do their own restores. For example, an e-mail message or file that was accidentally deleted last week can be retrieved from the archives with a few mouse clicks, saving a call to the IT help desk.

That kind of do-it-yourself capability appealed to the IT folks at Sears Home Improvement Products Inc. in Longwood, Fla., which scrapped a traditional tape backup arrangement and replaced it with a CDP product from Mimosa Systems Inc. to protect Microsoft Exchange e-mail.

Mimosa's NearPoint software runs on its own server, intercepts e-mail going to and from the Exchange server and sends it to disk on a storage-area network (SAN) attached to the NearPoint server. No software is installed on the mail server or on client machines, which made rollout of the CDP product pretty easy, says Bill Bragg, director of information systems at Sears Home Improvement Products. He calls NearPoint "a nonintrusive, continuous archiving product."


CDP Backup
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File servers
SOURCE: SYMANTEC CORP.

The 4,800-employee Sears, Roebuck and Co. unit has just 25 IT people, and before installing NearPoint, they were "pulling their hair out" over the dozens of requests each week from users wanting to restore things they had accidentally deleted. If the items were older than seven days — the time that deleted items are kept in the Exchange server's "trash can" — tapes had to be fetched, and a laborious restore process ensued. Now, NearPoint positions archived e-mail, phone mail and fax messages for near-instant retrieval, Bragg says.

Despite the benefits, he warns CDP users not to underestimate disk space requirements. He says the NearPoint SQL database has mushroomed to 2TB in a few months, and he may end up purging voice mails after 30 or 60 days or not archiving them at all.

Making backup and recovery easier for both end users and IT was also the motivation for Farmers & Merchants Bank of Long Beach. The California-based bank recently replaced nightly tape backups at each of 20 branches with Symantec Corp.'s Backup Exec 10d for Windows Servers, which includes a tool called Backup Exec Continuous Protection Server. Now, data is backed up continually via a frame-relay WAN to the bank's SAN at its main data center.

In addition, during business hours, an hourly snapshot of all changed files is created and maintained for 24 hours. The final snapshot of the day is retained for seven days. All data on the SAN is backed up to tape nightly for recovery and archival purposes. This kind of tiered data-protection scheme will become commonplace, analysts say (see box below).

Robert Graham, senior vice president for IS at the bank, describes the old days this way: "You can imagine having 20 locations with nontechnical people. Trying to get them to put the right tape in on the right day was practically impossible. One of my technicians was spending three to four hours per day — sometimes the whole day — making sure we had a valid backup at each location. I decided we needed something better."

Not only do users at remote sites no longer have to fret over backups, but they can also retrieve backed up files themselves. Graham estimates labor savings by end users and IT staff of about $250,000 annually, giving the project a five-month payback on investment.

Despite the advantages, he says disk-based backups via CDP are not yet common in the banking industry. "We are early implementers, but most banks are starting to look at this because of the issues of lost tapes," Graham says.

Vendor Landscape

David Russell, a storage analyst at Gartner Inc., says CDP isn't a completely new thing. It combines elements of traditional disk backup, snapshots and replication. CDP has been embraced first by smaller, more specialized IT vendors, but the big vendors are catching up, he says.

Russell says CDP is often used for Windows files — which tend to be "poorly protected or not protected at all" — and for Exchange e-mail systems, which can be difficult to protect. As users grow comfortable with CDP concepts, and as the larger vendors offer more products, CDP will migrate from its existing base on Windows and Exchange servers "up the computing stack" to mission-critical transaction-processing systems running on Unix and mainframe computers, he says.

Indeed, so unknown were CDP vendors just last year that when Jeff Prevet, network manager at Accretive Solutions Inc. in Hauppauge, N.Y., sought to replace a troublesome tape backup system for 12 remote offices, he Googled "WAN backup solution." That search led him to Andover, Mass.-based Availl Inc.'s CDP product.

Prevet says it used to cost $20,000 to set up a remote-office system, but now it costs just $5,000 because no tape hardware or software is needed. And Accretive now saves $15,000 per year per office — a total of $180,000 annually — on IT labor, tapes and off-site tape storage.

Schenck Business Solutions, an accounting services and consulting company in Appleton, Wis., is kicking the tires on three CDP offerings — NSI Software Inc.'s Double-Take, Microsoft Corp.'s Data Protection Manager (DPM) and the replication capability built into Schenck's 20TB EqualLogic Inc. iSCSI SAN.

A year and a half ago, Schenck removed the tape backup gear from its remote offices and now uses Double-Take to replicate data in real time to its data center, where it's backed up to disk and then to tape. The company is also experimenting with DPM for replicating some files.

James Tarala, CIO at Schenck, says Double-Take and DPM are more or less equivalent for remote-office backup. The advantage of Double-Take is that it is more mature and proven, while DPM could be more seamlessly integrated with Schenck's overall Microsoft environment. He says he has not decided which of the three alternatives, or some combina-

Continued on page 37

TIERS, NOT TEARS

"CDP is a great idea, and everybody will be doing it soon," says Heidi Biggar, an analyst at Enterprise Strategy Group Inc. in Milford, Mass. The slow industry adoption of CDP is the result of of a historic focus on backup rather than on recovery, she says. "Now, it's all about recovering data quickly and efficiently. CDP is a cost-effective means to that end." CDP should be used with other data-protection strategies, Biggar says. For example, she says, a user might keep backup data in tiers like the following:

- **24 hours of real-time data** on a Tier 1 recovery disk updated by CDP.
- **Two to 10 days of data** on Tier 2 recovery disk updated by near-CDP technologies, which provide greater recovery granularity than conventional backups with frequent snapshots but do not allow end users to recover to any point in time.
- **11 to 60 days of data** on Tier 3 recovery disk updated by near-CDP or snapshots that are less frequent than for Tier 2.
- **61-plus days of data** on Tier 4 recovery tape protected by traditional backup systems.

– GARY ANTHES

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Summit Agenda

8:00am – 8:30am	**Registration and Networking Breakfast**
8:30am – 8:45am	**Welcome and Opening Remarks** Julia King, National Correspondent and Executive Editor, Events, Computerworld
8:45am – 9:30am	**Opening Featured Speaker** Farzad Golshani, Vice President - IT Infrastructure, Transamerica
9:30am – 10:00am	**IT End User Case Study: Chicago Mercantile Exchange, Inc.** Jim Krause, Managing Director and Chief Information Officer, Chicago Mercantile Exchange, Inc.
10:00am – 10:30am	**IT End User Case Study: Lafayette Consolidated Government** Keith Thibodeaux, Chief Information Officer, Lafayette Consolidated Government
10:30am – 11:00am	**Refreshment and Networking Break**
11:00am – 11:30am	**IT End User Case Study: Integro Ltd.** Fred Danback, Head of Global Technology Services, Integro Ltd.
11:30am – 12:00pm	**IT End User Case Study: Landstar** Patrick Wise, Vice President, Advanced Technology, Landstar
12:00pm – 12:45pm	**Panel Discussion: IT Infrastructure** Moderator: Julia King, National Correspondent and Executive Editor, Events, Computerworld Panelists: Jim Krause, Managing Director and CIO, Chicago Mercantile Exchange, Inc.; Keith Thibodeaux, Chief Information Officer, Lafayette Consolidated Government; Fred Danback, VP Global Technology, XL Global Services
12:45pm – 2:00pm	**Networking Lunch**

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Continued from page 34

tion of them, he will eventually settle on for CDP.

For a manufacturing firm such as Prairie Packaging Inc., supply chain applications are king. Loss of information on goods in transit or even brief delays of that information can be disastrous. And, paradoxically, the newer the information is, the harder it is to re-create, says Manny Singh, director of IT at the Bedford Park, Ill.-based maker of disposable food-service products.

"If the system catastrophically fails, where would you get the information on what was en route at the time, what was produced, what was shipped and so on?" Singh asks. "The recovery of that data takes huge amounts of resources, because at that point there is no paper trail. Data from 10 minutes ago is the most important because it's the hardest to get back."

But data from 10 minutes ago, or one minute ago, out of some 15,000 daily transactions, is now protected by Revivio Inc.'s Continuous Protection System hardware and software. CDP software running with the supply chain application spins off data to the Revivio server, where it can be restored in minutes, Singh says.

He says that, before CDP, a four-hour outage at a distribution center could cost $100,000, more than the one-time cost of the system from Lexington, Mass.-based Revivio.

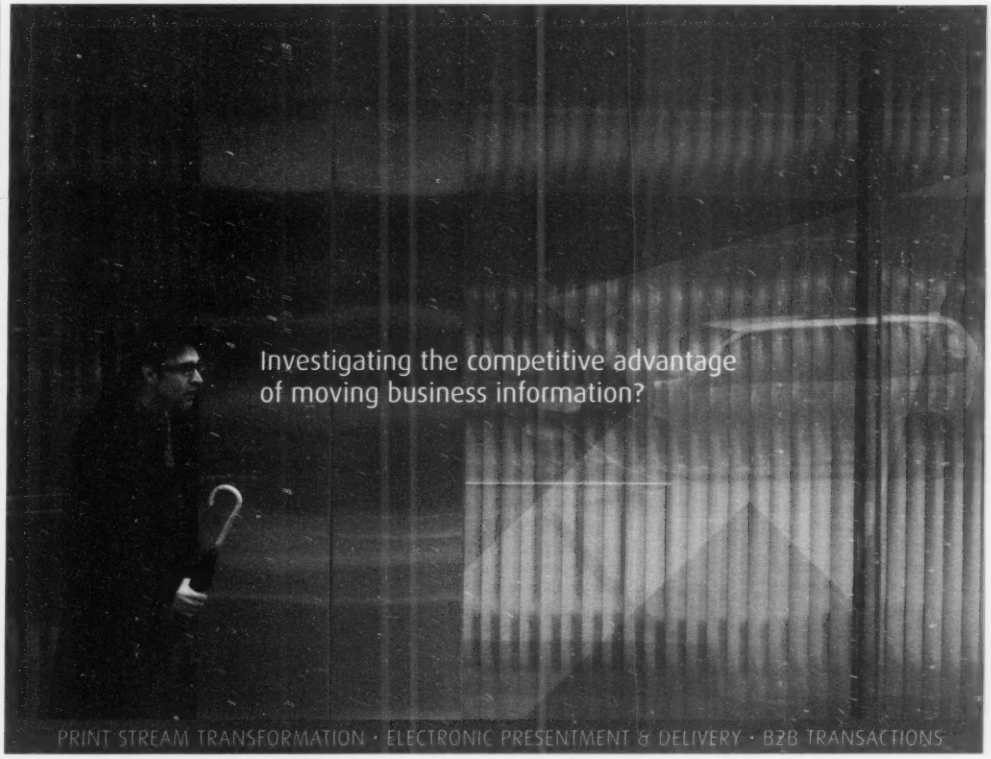
Big Dog Sportswear in Santa Barbara, Calif., protects its Microsoft Exchange e-mail with LiveServ hardware and software from Storactive Inc. in Marina del Rey, Calif. Big Dog also uses NSI's Double-Take to back up files such as spreadsheets, Word documents, retail store information and accounting information.

Big Dog's manager of MIS, Mike Fredrich, remembers precisely when CDP became an imperative. "Our CEO lost a bunch of e-mail that was exceptionally important to him," he says. At the time, Big Dog was negotiating to buy a 74-store retail chain called The Walking Co., and the lost messages included sensitive and important correspondence with the seller.

"It took me a full day to get them back from tape," Fredrich says. "Now it would be just two to three mouse clicks."

Silverman at EvansonBest says CDP, which he prefers to call "continuous data availability," has given him a significant safety net, but it's not enough. The company just brought up a third data center, in New Jersey, and it will soon begin replicating data from Manhattan to both its Albany and New Jersey data centers. Copies will exist on disk at three locations, plus what's backed up to tape.

Says Silverman, "From an IT director's point of view, you can talk about ROI all day, but what we are really talking about is being able to go home at night knowing that if something happens, you won't have to worry about finding your antacids."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MAKING THE MOST OF IT

An academic says that companies don't need more technology – they need to use the capabilities they have on hand.

MOST COMPANIES need to figure out how they can more effectively exploit the technologies they already have in place, rather than what new IT systems they need, according to Stéphane Gagnon, a professor at the Université du Québec and the New Jersey Institute of Technology. Gagnon specializes in the management of IT and teaches in both the management and computer science departments at the two universities. In a recent interview with *Computerworld*'s Tommy Peterson, Gagnon discussed IT-business alignment and related topics.

We've heard a tremendous amount in the past few years about aligning technology with business goals. What progress do you think has been made? It's typical for fast-growing companies that their efforts in bringing their house in order and using IT to do so have been successful. The question that's more important is, what are they doing with that technology? Their ERP systems, for example, are barely leveraged. Name me [any] companies that use all the functionalities they pay for. The answer will be, unfortunately, very disappointing. And that relates to management issues — to what extent did you plan ahead to use the functions, to leverage the functionality of all the applications that you buy?

That's the alignment we're talking about. Being successful in deploying systems and reengineering processes is OK. But fully leveraging the technology, that's where the success is still lacking.

That's why the emerging technologies of service-oriented architectures and business process management come into play and fit into the solution now. They provide a chance to leverage further and in new ways all the functionality sitting there, doing nothing, and tie it up together in properly redesigned business processes. Those companies that have succeeded at deploying basic enterprise systems need to leverage them better now.

So it's not the vendors lagging behind user needs? Vendors can't do more than what the end users are really prepared to do. What products should vendors come up with? They're pretty much coming up with all we need so far. We have all the technology we need to accomplish, for example, a complete redesign of a multibillion-dollar company — that's not an issue. We have everything we need to run this company from the ground to the top and make it a real-time enterprise. The question is, how do we want to leverage that technology, and are we prepared to leverage it?

Right now, however angry senior management may be with the IT departments of this world, and to what extent IT departments are in turn angry with vendors, I think it's merely to hide something. This is just a game to point blame. Whenever we point blame to vendors, it's a false problem.

The actual problem is leveraging technology. We have plenty of technology. We have plenty of vendor competition as well. In the SOA space, for example, we have plenty of large vendors, plenty of smaller vendors and plenty of risky adopters, who are ready to adopt the stuff early. The trick is to do it right.

The heterogeneous environment is generally acknowledged as a fact of life. Why isn't there more focus on integration issues, since those problems loom as large as they ever have? Perhaps it's a problem with "integration" as a word. Technically, four or five years ago, we were still in the EAI era. EAI was merely a message-queuing technology allowing you to integrate systems with message-passing interfaces. Today, we see a new trend, leveraging component-level integration, with SOA especially, and BPM that rides on the SOA. The integration problems in companies have changed. It's no longer a matter of integrating applications and data. It's primarily now to redesign processes and leverage component services.

The reason you don't hear so much about integration as you did in the past is because it's now being addressed by runtime platforms upfront; it's no longer a separate module like it was when you were buying MQSeries or Tibco. That may be the reason technically that we don't hear as much as before about integration projects. Seventy percent of new IT investment projects involve integration problems and most likely leverage some integration technologies in some ways.

Have we turned this major corner, and are we doing SOA from now on – or at least until something else comes up that changes that landscape? "That's what we do now" is always a risky phrase. I wouldn't say that we should only implement such technologies now. Whenever it's time to develop a new application or to maintain an existing application and modernize it, and especially to redesign processes, in that case, yes, [SOA is the choice]. Web services as a component mechanism, as opposed to message queues or other component mechanisms, and using [Business Process Execution Language] as a standard to develop [and deploy] your processes and using a runtime environment such as those we were listing a minute ago, these tool kits are certainly preferable to the ones we previously had.

If we're talking about routine maintenance of applications, which still remains quite a bit of an IT investment, then obviously SOA and BPM are not the answer right now.

Why isn't adoption going as rapidly as some had predicted? We're on the foot of another trend where BPM suites and SOA runtime environments are going to pick up. The leading indicator would be the investment in [quality assurance]. What QA brings you and what enterprise portfolio management brings you is transparency of your application infrastructure.

It tells you specifically which portions actually perform well or are, unfortunately, the bottlenecks in your processes. It then tells you precisely where to go to surgically modernize or modify your application, or re-engineer processes or entire organizations, and in the process tells you what the potential is of implementing BPM and SOA. This trend on QA and testing over the past two years is just the start of a real trend to SOA and BPM. ▸

Stéphane Gagnon

TITLES: Professor at the Université du Québec, vice president of research and standards at the Integration Consortium and CEO of Innovations Intracubator Inc. in Montreal.

ACCOMPLISHMENTS: Gagnon holds a Ph.D. in business administration from the Université du Québec à Montréal. He specializes in the management of technology, with a focus on service-oriented architectures, business process management and model-driven architectures. His current academic projects include benchmarking business services network gateways, commercializing software as a service and creating new development methods for systems integration. Gagnon is co-chairman of the Integration Consortium's Global Integration Summit, which will take place in Boston later this month.

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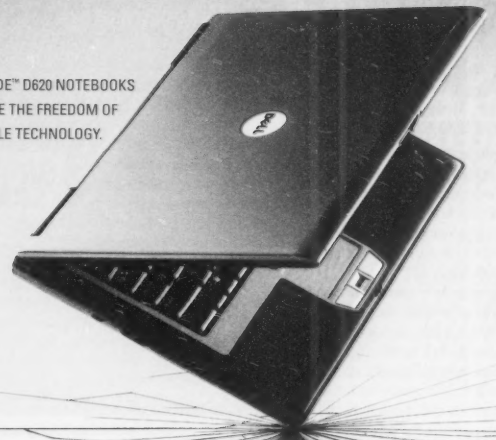

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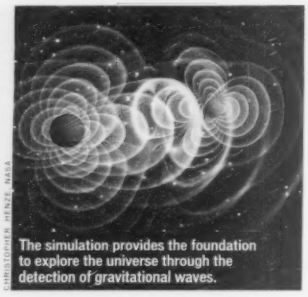
Geek's Garden

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE



The simulation provides the foundation to explore the universe through the detection of gravitational waves.

NASA Models Collision Of Black Holes

SCIENTISTS at NASA have reached a breakthrough in computer modeling that allows them to simulate gravitational waves from merging black holes. The 3-D simulations, the largest astrophysical calculations ever performed on a NASA supercomputer, provide the foundation to explore the universe in an entirely new way.

According to Einstein's math, when two massive black holes merge, all of space jiggles like a bowl of Jell-O as gravitational waves race out from the collision at light speed.

Previous simulations had been plagued by computer crashes. The necessary equations, based on Einstein's theory of general relativity, were far too complex. But scientists at NASA's Goddard Space Flight Center in Greenbelt, Md., have found a method to translate Einstein's math in a way that computers can understand. The simulations were performed on the Columbia supercomputer at NASA's Ames Research Center near Mountain View, Calif.

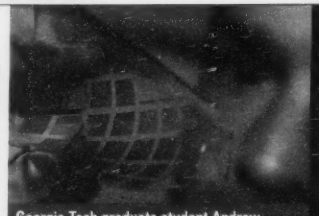
Similar to ripples on a pond, gravitational waves are ripples in space and time, a four-dimensional concept that Einstein called space-time. They haven't yet been directly detected. Gravitational waves hardly interact with matter and thus can penetrate the dust and gas that blocks our view of black holes and other distant objects. They offer a new window to explore the universe and provide a precise test for Einstein's theory of generai relativity.

Black hole mergers produce copious gravitational waves, sometimes for years, as the black holes approach each other and collide. Black holes are collapsed stars whose gravity is so extreme that not even light can escape their pull. They alter space-time, and that's the difficulty in creating black hole models: As space and time shift, density becomes infinite and time can come to a standstill. Such variables cause computer simulations to crash.

The Goddard team has perfected the simulation of merging equal-mass, nonspinning black holes starting at various positions corresponding to the last two to five orbits before their merger.

With each simulation run, regardless of the starting point, the black holes orbited stably and produced identical waveforms during the collision and its aftermath. This unprecedented combination of stability and reproducibility assured the scientists that the simulations were true to Einstein's equations.

Einstein's theory of general relativity employs a type of mathematics called tensor calculus, which can't be turned into computer instructions easily. The equations need to be translated, which greatly expands them to thousands of lines of computer code. Through mathematical intuition, the Goddard team found the appropriate formulations that led to suitable simulations.



Georgia Tech graduate student Andrew Cannon shows a plastic sheet containing micro-mechanical etching.

Georgia Tech Teams With Sandia For Nanocircuit Breakthrough

GARY MEEK

USING A COMBINATION of experimental data and simulations, researchers have identified key parameters that predict the outcome of nanoimprint lithography, a fabrication technique that offers an alternative to traditional lithography in patterning integrated circuits and other small-scale structures into polymers.

Results of the three-year study, conducted by researchers at the Georgia Institute of Technology and Sandia National Laboratories, provide a road map to guide development of next-generation micron- and nanometer-scale high-resolution imprint manufacturing. By reducing costs and time, the design rules could help make high-volume production of nanotechnology-based products more economically feasible.

"This work provides a rational link between what engineers want to make using nanoimprint lithography and the path for creating them," said William King, an assistant professor in Georgia Tech's School of Mechanical Engineering.

Nanoimprint lithography is the ultraminiaturized version of the decades-old embossing process in which a master tool – or a mold – is pressed into a soft material to create detailed patterns. Using a broad range of polymer materials, nanoimprint lithography produces structures on the micron or nanometer scales, offering the potential for lower production costs.

However, quality issues caused by unpredictable polymer flow into the nonuniform features of embossing tools pose a major stumbling block. Earlier research into this complex process has produced often conflicting recommendations, forcing manufacturers to pursue costly, trial-and-error projects.

The research ultimately pointed to specific parameters that determine the outcome of the process. These include key geometric parameters that predict the polymer deformation mechanism. By reducing the complex set of variables to key parameters, the scientists have been able to account for the varying process outcomes reported by other researchers in dozens of papers, King said.

The results could have applications in semiconductor manufacturing, where nanoimprinting offers a potential alternative to increasingly expensive lithography processes to produce circuitry. It could also help make high-volume production of nanoscale structures for optoelectronic, biomedical and other applications more economically feasible.

GROVES OF ACADEME

DIFFERENCE ENGINES

Working With Vacuums

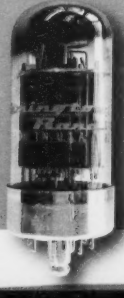
WITH SOME EXCEPTIONS – including Babbage's purely mechanical engines – early digital computing machines were electromechanical. That is, their basic components were small, electrically driven mechanical switches called relays. It was the development of high-speed digital techniques using vacuum tubes that made the modern computer possible.

In 1904, British engineer Sir John Ambrose Fleming invented and patented the two-electrode vacuum-tube rectifier, which he called the oscillation valve. This is often considered to have been the beginning of electronics, for this was the first vacuum tube. Fleming's diode remained a vital unit in radio receivers and radars for many decades, until solid-state electronic technology took over.

Sir John Ambrose Fleming

In 1906, U.S. scientist Lee de Forest added a control grid to the valve to create a vacuum tube RF detector called the Audion. De Forest refined his device into an amplifier tube called the triode. The triode was vital in the creation of long-distance telephone and radio communications, radars and early digital computers.

The earliest extensive use of vacuum tubes for digital data processing appears to have been by engineer Thomas Flowers working at the Post Office Research Station in London. Electronic digital equipment designed by Flowers in 1934 for controlling the connections between telephone exchanges went into operation in 1939, and involved 3,000 to 4,000 vacuum tubes.



A vacuum tube used in Remington Rand's Univac computer

Between 1937 and 1942 at Iowa State College, John Atanasoff developed techniques for using vacuum tubes to perform numerical calculations digitally. In 1939, with the assistance of student Clifford Berry, Atanasoff began building a small-scale, special-purpose electronic digital machine that contained approximately 300 vacuum tubes for solving systems of linear algebraic equations. By 1946, researchers from the U.S. Army and the University of Pennsylvania had built ENIAC, the first large-scale digital computer, which contained 17,468 vacuum tubes.

But the end of vacuum-tube computing was signaled in 1947, when William Shockley, John Bardeen and Walter Brattain at Bell Labs developed the transistor, heralding the age of solid-state electronics.

PAGE COMPILED BY TOMMY PETERSON.

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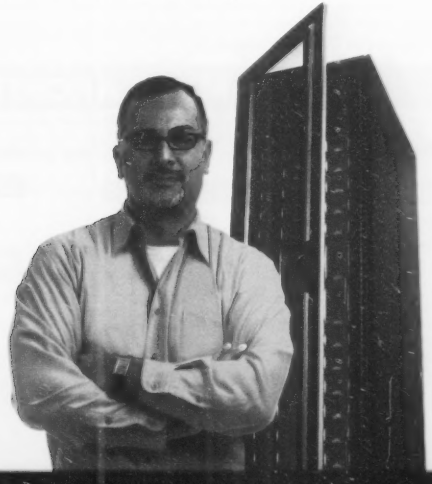

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NDMP

DEFINITION

The **Network Data Management Protocol** is an open standard that's designed to manage data backup and recovery of network file servers and other specialized storage appliances. NDMP provides compatibility with general computing devices without interrupting special backup functions such as snapshot creation.

BY JAN MATLIS

IT HAS BEEN a decade since the first version of the Network Data Management Protocol was launched as an effort to solve the problems posed by the backup and recovery of network file servers. Initial work on the standard was spearheaded by Intelliguard Software (subsequently rolled into Legato Software and EMC Corp.), which produced storage management software, and Network Appliance Inc., which manufactures network file servers.

QUICK STUDY

The standard was developed to address the fact that network file servers are not able to use the storage device drivers designed for general-purpose computers. They are specialized appliances that connect to a network and are optimized to perform a single set of tasks. Their files are usually mounted by general-purpose computers through protocols such as the Unix/Linux Network File System and Microsoft Windows Common Internet File System.

Without NDMP, there were two choices for backing up network file servers. One was to mount their file systems onto the file system of a computer across the network and do the backup there. The downside was that backup and restore required network and server bandwidth. Moreover, the added complexity made it difficult to use optimized aspects of the network file server, such as Network Appliance's Snapshot capability.

The other option was to write driver software for each type of network file server and locally attached storage system (tape drives, jukeboxes, CD-ROM writers). That required vendors (manufacturers of network file systems and storage systems and/or backup control software houses) to produce multiple driver variants.

The advantage of NDMP is that it establishes a single set of interfaces between the three components involved in a backup or restore operation — the software controlling the backup or restore, the source medium and the destination medium. When all the components are NDMP-compliant, the manufacturer of each can concentrate on maximizing the efficiency of its side of the interface.

By 1999, the time for backing up an Oracle database residing on one of Network Appliance's network file servers had been reduced from hours to minutes. Instead of mounting the network file server's files to the computer acting as an Oracle server, the backup was done locally on the network file server and used Network Appliance's Snapshot files, which allow for live backup of a consistent disk image.

The paradigm for NDMP is a client/server architecture in which data producers and consumers are thought of as servers or service providers, and the backup control software, which starts, stops and monitors backup and recovery, is thought of as a client. There is one client per NDMP session. There can be multiple servers.

In NDMP documentation, clients are also sometimes called data management applications, and servers or service providers are called data service providers (DSP).

A DSP such as a network file server produces a data stream when it provides data to a storage system for backup. It consumes data when a storage system provides it with data for a restore.

Data Replication

This agnostic view of whether a data service is a producer or consumer lends itself to data replication. One storage system can provide a data stream that is consumed by an identical storage system, and the data is copied from one system to another.

In the original versions of NDMP, only one data stream was allowed in the transaction between producers and consumers. In Version 5, which is in the proposal stage this year, that requirement has been loosened with the invention of the Translate Service, which sits between producers and consumers and can multiplex data streams. Although it may open up the possibility for all kinds of intermediate translation, its immediate goal was greater efficiency, allowing the faster side of what had been a single producer/consumer pair to chew data from several sources at once.

In an NDMP session, there is always one TCP/IP connection between each service and the software that centrally manages the network's backup and recovery operations, which is the data management application. NDMP is geared toward facilitating centralized control of backup and recovery operations. The client initiates contact with services via a well-known TCP/IP port and then follows up with a standard command-and-response dialogue, which is effectively a state machine, with the state maintained on the client. The data services are moved through states with names such as "Idle," "Listen," "Active" and "Halted."

Although the basic paradigm for all communication, both control and data, is via TCP/IP, the door is left open for services to realize local efficiencies, such as when a backup device is attached locally or if a system happens to be on a high-speed storage-area network.

Up through Version 4, there were several standard network configurations for NDMP backup and restore sessions. In one, the client sits on a server of its own and commands a network file server to back up to a locally attached storage device. In another, the client again sits on a server of its own and commands a file server to back up, but this time to a storage device located elsewhere on the network. The standard configurations for restore are identical, except the data flow goes in the other direction.

Version 5 is concerned with Internet issues, such as security authorization and networks that exist across the Web (which is one of the reasons the NDMP working group has migrated from the Storage Networking Industry Association to the Internet Engineering Task Force).

Matlis is a freelance writer in Newton, Mass. Contact him at jmtgpcmcm@netzero.com.

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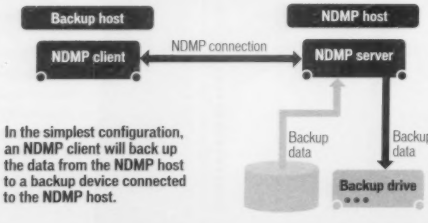
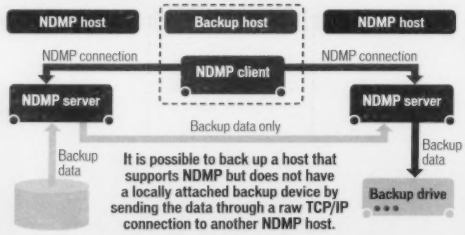
SAMPLE ARCHITECTURES

SIMPLE CONFIGURATION



In the simplest configuration, an NDMP client will back up the data from the NDMP host to a backup device connected to the NDMP host.

JUKEBOX CONFIGURATION



It is possible to back up a host that supports NDMP but does not have a locally attached backup device by sending the data through a raw TCP/IP connection to another NDMP host.

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Offshore Security Is Out Of Sight, Not Out of Mind

Our manager takes a security tour overseas to observe procedures and educate the offshore workforce. By Mathias Thurman

FROM AN information security perspective, my company's offshoring strategy has been a nightmare. I have seen very little awareness of information security requirements among our offshore partners, and cultural differences extend to what constitutes intellectual property and how it should be handled.

But despite all the grief offshoring brings me, it's a practice we can't afford to abandon. Thus, I am in the midst of a world tour, visiting China, Korea, Singapore and Taiwan last month, heading to India this month and then making my way to Europe and Russia next month.

SECURITY MANAGER'S JOURNAL

We have employees in each of these countries doing very important work for us, and without those relationships, we would have a hard time surviving in our industry. Our competitors are cutting the costs of the goods they produce by offshoring, and so we must conduct business in the same manner.

This fact of life can be hard to keep in mind, though, when I am constantly getting calls from our CIO and legal department telling me about suspicious behavior of overseas employees and allegations of intellectual property theft. The same sorts of things can happen with employees in the U.S., of course, but there has been an increase in reports of such activity in certain overseas locations. Worse, the laws in these areas are not always clear or completely enforceable, so even if we do catch someone, there's not much we can do other than fire him.

These trips, then, are giving me an opportunity to make some firsthand observations about security practices at the various sites and to try to educate our overseas employees about the serious ramifications that come with ignorance of security policies.

On the East Asian leg of my tour, I visited some of our company's major customers. They regularly call our service technicians to conduct routine maintenance on our equipment, which is very sensitive and requires a considerable amount of calibration on a regular basis. I have talked before about the value and importance of the intellectual property that's contained in the service manuals used by our technicians and about my investigation into digital rights management (DRM) as a means of protecting this intellectual property. As I said then ["Intellectual Property Is Focus at New Job," Aug. 22, 2005], the service business generates a significant amount of revenue for my company. If the service manuals fall into the wrong hands, a third party or rogue employee could offer our customers discounted service, and we'd be out a lot of revenue.

But by being on the ground at customer sites, I learned how the service technicians really work and found out that simply instituting DRM without taking other measures will do nothing to protect our intellectual property. For the most part, the service technicians just print out a few pages of the PDF manual to bring into customer facilities. It seems that many of our customers have strict policies on bringing in laptops, CD-ROMs or other external media. In addition, the printed copies are easy to take notes on. So, security needs are crashing up against the operational needs of our technicians.

> I learned how the service technicians really work.

Another complication is that some of the DRM technology I've been looking at requires an Internet connection to obtain policy information, yet all of the facilities I visited restrict Internet access.

As the Cookie Crumbles

Next up was security awareness training. Because of the workload of the employees, I was given only an hour, but I could have gone on for six hours on this topic. Needing to be brief, I first spoke about intellectual property. Needing to get my point across to people who don't have the best command of the English language, I started out with a basic definition and then related intellectual property to chocolate chip cookies. Everyone likes cookies, I said, and everyone has a favorite brand. But what makes one taste better than another? It's the recipe — the ingredients, the amounts and the baking temperature — and a cookie company's recipe must be kept secret from competitors; it is intellectual property.

For my company, the recipe is the "bills of materials," the specifications of the components, which are intellectual in nature and set us apart from our competitors. I seemed to get my point across, and I had enough time left to discuss the need for basic awareness of issues such as virus protection, incident reporting, social engineering, our acceptable-use policy and wireless security.

At each site, I also conducted some limited vulnerability assessments. I had my laptop, which I dual-booted to Linux. On the Linux partition, I had a fresh install of Nessus, a freely available assessment tool, and I used it to run some scans of the local network, including desktops and servers. Nessus discovered ports that were responding on some of the desktops, which indicated that some users' machines might be infected with malicious code that operates by opening a port and waiting for a remote connection. I prepared a report and presented it to the local IT guy at each site.

I had also brought my handy Hewlett-Packard iPaq with AirMagnet software installed, which I used to detect several wireless access points connected to our network. We were able to find out which user had deployed these access points.

As I suspected, the access points were available for a few dollars at a local market, and the user thought it would be convenient to be able to roam around the office without being tied to Ethernet ports. He didn't understand the security ramifications of installing rogue access points or the policy that we have in place prohibiting them. Apparently, that policy wasn't fully translated into the language he speaks.

With four countries behind me, this trip has already been worthwhile, and I anticipate that the same sorts of issues and challenges will arise as I continue my travels.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

Preventing Web Attacks With Apache, by Ryan C. Barnett (Addison-Wesley Professional, 2006). Application security has always been one of the more difficult disciplines within the information security field, but this book can help. My favorite part is Chapter 5, in which the author goes through the various security modules available for Apache; his explanation of Secure Sockets Layer is right on. You'll also want to pay attention to Chapter 9, which discusses methods for preventing, detecting and responding to attacks against Apache.

– MATHIAS THURMAN

NIST Lists Security Log Guidelines

The National Institute of Standards and Technology has released Special Publication 800-92: Guide to Computer Security Log Management. The draft guidelines address log generation, transmission, storage, analysis and disposal. They offer suggestions for creating a log management policy and a centralized log management infrastructure. Intended for use by federal agencies, the guidelines are also available to the public.

Hitachi Addresses JP1/Server Flaw

Hitachi Ltd. has acknowledged that a vulnerability in the software that ships with several of its JP1/Server products could be exploited to create denial-of-service conditions. It has released patches for the holes and suggested work-arounds that can be used until the patches are applied.

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BRIEFS

Layer 7 Upgrades Security System

■ Layer 7 Technologies Inc. in Vancouver, British Columbia, last week announced a new version of the operating system that runs its SecureSpan line of XML gateways and firewalls. Version 3.5 Security adds clustered policy and session features designed to allow multiple service-oriented architecture devices to work together. The new operating system automatically replicates policy across clusters of devices and allows administrators to monitor traffic and availability by clusters, according to the company. In addition, it provides no-downtime configuration change management across clusters and automatic fail-over. Pricing was not available.

Linus Networx Adds CEI Visualization

■ Bluffdale, Utah-based Linux Networx Inc. announced that it will integrate products from visualization software vendor Computational Engineering International Inc. (CEI) with its systems. Linux Networx's visualization systems will include a preinstalled evaluation copy of Apex, N.C.-based CEI's EnSight DR.

Universe Software Releases PDF App

■ Universe Software GmbH in Neuss, Germany, has released Version 4.0 of fdf-Converter, its PDF form data-capture software for Windows, Mac OS X and Linux. The application, which sells for $88, allows easy processing of data entered into PDF forms so it can be converted into CSV format in one click. Once data is in CSV format, it can be transferred to a single file for use in databases or spreadsheets such as Microsoft Excel. The application maintains the original PDF forms and data without altering them. Version 4.0 offers a new preview function, which displays how the layout of the finished table, including data, will appear, according to the vendor.

ARDEN L. BEMENT

Progress, Prosperity and The Cyberinfrastructure

THE term *cyberinfrastructure* resembles something from a William Gibson novel, but the National Science Foundation is working to make it a reality. *Webster's New World College Dictionary* defines *infrastructure* as the basic facilities needed for a society to survive and grow. Expanding this definition, cyberinfrastructure, or CI, is the essential IT infrastructure needed for the U.S. to prosper in a global knowledge economy.

ARDEN L. BEMENT is the director of the National Science Foundation. You can reach him at **abement@nsf.gov**.

The U.S. economy is inextricably linked to technological innovation and therefore to fundamental scientific research. CI is both an object of research and an enabler of research. As the object of research, CI programs will lead to a better understanding of the impact and use of advances in science, industry and academia. As an enabler of research, CI will help scientists answer today's complex questions, paving the way for future discovery.

A Feb. 6 *Computerworld* article makes a case for advanced CI. The article "IT Struggles with Climate Change" revealed that today's supercomputers can't run the complex simulations that climatologists need to study global warming. MIT researcher Patrick Heimbeck explained, "We . . . require a minimum of a twenty-five-fold improvement in computational technology." The NSF is working toward a thousandfold increase in computation, data storage and networking.

The fastest supercomputers run at the terascale, performing trillions of operations per second. The NSF is aiming for the petascale — a quadrillion operations per second. Petascale computing will handle today's computational problems while allowing researchers to answer new questions in the future.

That future is not far away. On March 24, the NSF hosted the Petascale Acquisition Forum, which brought together systems vendors, support contractors and researchers to discuss the timeline and strategies for building petascale computing systems. The NSF plans to issue the first grants in fiscal 2007, if Congress appropriates the money.

High-performance computing is a key component of the NSF's CI project, but it is not the only one. Our draft vision document, which is available on the NSF Office of Cyberinfrastructure Web site (*www.nsf.gov/oci*), includes strategic plans for four critical components of a comprehensive cyberinfrastructure: high-performance computing; data, data analysis and visualization; virtual organizations; and learning and workforce development.

We hope to publish the first version of the vision document this spring. However, it remains a living document that will evolve with help from the community.

The roles of high-performance computing and data analysis in any robust CI are obvious. Virtual organizations are not so obvious, yet their inclusion reflects the holistic philosophy behind the NSF's CI plans. Virtual organizations cross barriers of time zones and distance to allow researchers and educators to work together. Participants will share computational, data and instrumentation resources for long-term collaborations or to rapidly address spontaneous problems.

For example, in response to Hurricane Katrina, researchers at Tulane University and Xavier University united to create KERRN, the Katrina Environmental Research and Restoration Network. Using existing technologies, scientists and educators across the world, from the University of Texas to Radboud University in the Netherlands, are developing methods to address major environmental disasters. The next generation of CI will enhance KERRN's work and foster new collaborations across the world.

By definition, CI represents collaboration and community. The NSF can't develop a national cyberinfrastructure in a vacuum. We absolutely need the ideas and talents of other federal agencies, industry and academia.

Cooperation with other federal agencies will reduce duplication of effort and promote effective stewardship of tax dollars. Private-sector involvement will ensure that CI is built upon open standards for interoperability. Partnership with the research and education community will help the NSF balance efforts to meet the specific needs of the various disciplines with the development of shared CI components that are useful across the disciplines. Guidance from educators will help us position CI as a learning and workforce-development tool.

Learning and workforce development are critical. It is fruitless to produce new, nearly magical technologies without also creating an educated force of students, scientists and workers who can use and maintain those technologies. We need to develop workers who are as skilled with CI as they are with iPods. In the future, CI will be just as ubiquitous and as revolutionary.

The U.S. need for cybersavvy students, scientists and workers is intensified by the global challenges to U.S. competitiveness. The NSF must transcend today's Internet and Web browsers to develop the next generation of cyberinfrastructure technologies. By doing so, we will also develop the cybersavvy workforce of researchers and technicians that will keep the U.S. at the forefront of knowledge and the global economy. ▸

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The Seven Deadly Sins Of Outsourcing
We asked IT veterans to talk about the bad decisions and faulty assumptions that can cause an outsourcing project to fall from grace. They came up with seven steps to outsourcing hell. **PAGE 56**

Career Watch
An expert explains why you should consider a prospective employer's corporate structure; a survey reveals what makes software engineering the best job in the U.S.; and a poll shows that bad staffing decisions have lasting consequences. **PAGE 60**

OPINION
IT Energy Costs: The Quiet Budget Killer
Reducing your energy use is a relatively easy way to cut your infrastructure costs, says Bart Perkins. Here are lots of suggestions to get you started. **PAGE 62**

Are You M&A-Ready

By Mary Brandel

ILLUSTRATION BY BRIAN STAUFFER

Quick IT integration is a key to successful mergers. Here's how to line up your pieces.

CIO JERRY BARTLETT is on a 12-month countdown. His company, online broker Ameritrade Holding Corp., announced last June that it would acquire rival TD Waterhouse USA for $2.9 billion. On Jan. 25, 2006 — the day after TD Ameritrade became a legal entity — Bartlett was already in execution mode, acting on decisions made months earlier, such as which of the acquired company's IT systems and applications would be absorbed, which would continue to run alongside existing Ameritrade systems and what the size of the combined IT organization would be.

TD Ameritrade, along with many other companies schooled in mergers and acquisitions, knows that successful M&A outcomes depend heavily on the expedient integration of the merging companies' IT systems.

"The longer you wait to move to a single set of systems and retire applications, the more expense you carry in terms of staffing and hardware costs and maintenance," says Bartlett, who has shepherded Ameritrade's IT department through seven previous M&A deals. Besides, Bartlett has shareholders to answer to: A 12-month IT integration window was built into TD Ameritrade's earnings expectations.

Twelve months sounds about right to another merger veteran, Norbert Kubilus, CIO at Sunterra Corp. The Las Vegas-based resort company has made dozens of acquisitions in its 16-year history. "My experience has been if you don't complete a consolidation within a year, you rarely realize the financial benefits of the consolidation," says Kubilus, who has been directly involved in 15 acquisitions and has consulted on a dozen more.

And it's not just a question of cost.

In many industries, technology is so integrated with business processes that to merge operations, you have to merge IT, says Christophe Duthoit, vice president and director at Boston Consulting Group, a global business consultancy in Boston. "IT can help to achieve a number of merger objectives," he says.

That's why the ability to integrate two disparate IT departments — and do it quickly — has become a highly valued skill, particularly in light of today's heightened M&A activity. In 2005, the total volume of global mergers and acquisitions reached $2.9 trillion, a 38% increase over 2004, according to Dealogic LLC, a capital markets technology vendor.

And experienced CIOs have learned that there's a lot they can do before a merger is even contemplated that will increase the chances of success down the road.

Don't Be a Statistic

Although experts say that more than half of mergers fail, a prime way to avoid becoming part of that statistic is to integrate quickly, according to a 2003 study by the U.S. Federal Trade Commission. And that means getting started well before what M&A veterans term "Day One," or the first day the two companies are considered legally merged.

Indeed, while IT has often been "the forgotten child" of postmerger integration, according to Duthoit, more companies today are building an IT postmerger integration capability upfront — well before they actually go through a merger, acquisition or divestiture, he says.

And all that planning just gets you into that 12-month window; it takes a lot more to get you out the other side. "Even with a well-planned and agile and simple infrastructure, it still takes eight to 12 months to integrate IT functionality," Bartlett says. "You have to assess what gaps you need to fill, and there's a lot of analysis that goes into that."

Since any merger will require a comparison of each company's technology capabilities to identify redundancies, synergies and gaps, a good first step in becoming M&A-ready is to thoroughly document your own infrastructure components and applications, as well as their strengths and weaknesses. This includes an assessment of application availability, scalability, reliability and total cost of ownership, Bartlett says.

"We look at all that, even though we go into the deal with the hypothesis that Ameritrade is the system of choice," he says. "We have an obligation to our clients, shareholders and associates to conduct a transparent analysis."

Northrop Grumman Corp., which has acquired three multibillion-dollar companies since 2001, takes a different approach. Tom Shelman, CIO at the $30 billion global defense company, has defined which of the company's infrastructure components and applications are "non-negotiable" and must become the standard for acquired companies. These include its approaches to security, network access, e-mail and directory services, as well as its IT governance processes. "It's nice to go through an acquisition and not have those arguments and religious wars," he says.

But Shelman has also defined areas where standardization is less important or even impossible. An example occurred during Northrop's 2002 acquisition of Newport News Shipbuilding, which builds nuclear-powered aircraft carriers. "We could never have integrated everyone because of the specialized requirements of being a nuclear company," Shelman says. "Some of their processes required additional oversight."

While documenting your systems, you should also define your core business processes and analyze how well your existing systems support them.

"There might be specific applications where you could benefit from the more advanced model of the company being acquired," Duthoit says. "You want an objective and factual decision-making process that enables your systems selection to be done quickly."

Once a merger hits, you'll be happy to have at least some of that analysis work documented in advance. You'll also want to have a process for managing the integration, because two or three months after the deal closes, "the CIO needs to be prepared for absolute chaos, and he'll have to find a way to put that chaos in order," says Dries Bredenkamp, director of the Western region merger integration practice at PricewaterhouseCoopers.

This is the time frame in which the business units begin submitting their systems requirements, which could include anything from 100% data transfer to the acquirer's system, integrating the best functionality from each company's applications or running the systems in parallel.

"If you don't have a project management system in place to accommodate all those changes, you'll not only fall behind, but the costs will add up," Bredenkamp says.

Reducing Chaos

One way to stave off some of this chaos — or at least divide it into manageable chunks — is to organize the IT department so that "account managers" coordinate technology efforts for individual business units, Bredenkamp says. That way, not only do you have IT people with intimate knowledge of how well core processes are being supported by existing systems, but you've also got the key relationships and an effective planning method to manage all the components of the integration.

Acquisition-minded companies also work on simplifying their technology infrastructures and applications through standardization. This drives out costs and creates a more agile environment, Bartlett says. "It makes your choices easier when it comes to integration, because you already have a well-thought-out architecture and road plan," he says.

A related effort is to minimize software customization, Kubilus points out. He recalls being involved in an acquisition in which both companies used the same version of Oracle Financials, but because one system was heavily customized, it was difficult to integrate the applications.

Another key area to analyze in advance is the terms of your hardware contracts and software license agreements. For one thing, make sure your software licenses are easily transferable. "If the license isn't written correctly, the software isn't good for anyone you acquire or transferable to anyone you divest," Kubilus says. It's important to know beforehand about hidden costs resulting from the need to buy new licenses.

Kubilus tells of one merger in which a company believed it had 90 licenses for a particular piece of software because it owned 40 licenses outright and 50 through a previous acquisition. Closer inspection of the license agreement revealed, however, that the 50 licenses were invalid because during the prior acquisition, nobody had notified the software vendor of the license

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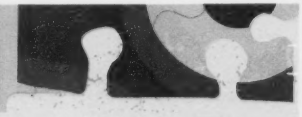
What's Your Type?



PLANNING FOR A MERGER that isn't yet on the table means first understanding the different types of deals that can happen and which one your company is most likely to be involved with. There are three common types:

COMPLETE ABSORPTION. The buyer plans to swallow the target company whole and spit out all the redundancies. The target company will likely be expected to migrate most of its data onto the acquirer's systems and adopt its applications, except for the business areas that are so specific to that business that they have to be maintained separately.

The potential buyer should analyze its current application set for functionality, scalability and integration across business units, says Robert Mack, an analyst at Gartner Inc.

There are also "reverse mergers," where the buyer isn't sophisticated in IT and therefore adopts the systems of the target company, says Gregg Nahass, a partner at PwC Advisory and leader of the firm's Western region merger integration practice.

RUNNING IN PARALLEL. The acquirer is looking to broaden its set of products or services by buying a company in a market outside of but complementary to its own. The target firm will likely keep its systems intact, but the two companies will need to at least integrate the financial and human resources applications, in additional to getting everyone on a common e-mail and network infrastructure. "Make sure you can expand those areas readily," Mack says.

MERGER OF EQUALS. When two industry titans merge, the IT goal is to take the best systems and applications and integrate them. This requires evaluating whether to cut over to one or the other's systems or to create a complement of the two. This is the toughest type of IT integration, but it represents only about 5% of merger activity, Mack says.

– MARY BRANDEL

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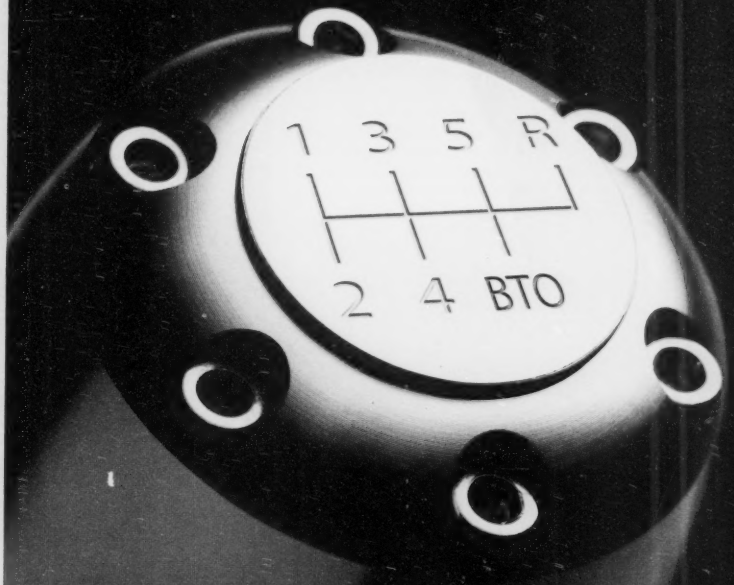

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Lining Up Skills

IT'S EASY TO FOCUS only on the technology planning of a merger or acquisition. But forgetting about staffing implications can be fatal. "From a conceptual level, you should start thinking about who the key players are who'd need to be involved in the merger integration process," says Harold Schroeder, president of management consultancy Schroeder & Schroeder.

And considering that the integration often becomes a near-full-time occupation, who will take over for those staffers' operational roles?

Schneider also suggests lining up your thoughts on your top-level executive team. "There will be some juggling for positions between the two companies, so you want to get all your ducks lined up," he advises. "Who is the key talent, and what do they bring to the table, not only on an ongoing basis but during the transition?"

Jerry Bartlett, CIO at TD Ameritrade, suggests taking a skills inventory. At his own company, he works as quickly as he can within legal constraints once the deal is announced so he can begin comparing the two companies' job titles and their related functions to line up the merged company's skill sets.

Make sure you have two years' worth of performance reviews, Bartlett adds. "You need to use objective, performance-based assessments of the staff in both firms before making people decisions," he says.

It's also smart to be on the lookout for someone experienced in managing an acquisition integration project. "We did a good job training people, but if I had to do it over, I'd look for that skill going into it," says Tom Shelman, CIO at Northrop Grumman.

– MARY BRANDEL

Continued from page 50

transfer, which was a requirement of the license agreement.

"Bottom line," Kubilus says, "make sure that with any agreement you get into, they're extendable to the acquired entity, and if you're acquired by somebody, that you don't have minimum purchase levels you're still locked into."

Integration Aid

Merger veterans have also learned to invest in their technology infrastructures to facilitate integration with those of potential acquisitions. Northrop Grumman, for instance, uses IBM's WebSphere as its enterprise application integration (EAI) hub.

Kubilus has moved a number of Sunterra's systems to the Linux platform to increase their adaptability. He also uses Web services to bridge the gaps between systems.

Based on transaction volumes and a desire for real-time data transfers at Las Vegas-based Harrah's Entertainment Inc., CIO Heath Daughtry chose the EAI approach, using integration software from Tibco Software Inc.

TD Ameritrade has adopted a service-oriented architecture model, in which it has defined 40 to 50 key services. When it needs to add a new function as a result of a merger — such as a certain type of balance transfer or enhanced report — IT can bundle existing services to create a new application, written in Sun Microsystems Inc.'s J2EE, rather than starting from scratch. "It's something we can do in a standard eight-to-10-week development cycle," Bartlett says. "That makes us agile."

The specific choices you make are less important than the planning itself, Shelman says. "Once you get into the acquisition, that's the wrong time to start that debate," he says.

But beyond any technology measures, by far the most important preparation is to figure out how IT can insert itself at the front end of the merger decision-making process. This means playing a key role in due diligence and, better yet, if you're the acquirer, making sure you're on the team that selects the target company.

"For any company that's heavily reliant on IT as an enabler, the CIO should be there at the get-go," says Harold Schroeder, president of Schroeder & Schroeder Inc., a management consultancy in Toronto. "Only he can say whether the companies' systems are compatible, whether the target firm is being held together with Band-Aids and bailing wire, and how difficult it would be to move to a single system."

Michael Spellacy, a partner at Boston Consulting Group, recounts a recent near-merger between two major banks in the U.S. that fell apart when the due-diligence team estimated it would take five years to integrate the two entities' extremely complex IT infrastructures.

Even when IT doesn't play a deal-breaker role, it's the only department with enough insight to estimate integration costs and potential IT cost reductions with some degree of accuracy, which can ultimately affect the numbers on the table, Shelman says. And if IT is not involved, it may find itself having to live up to overly aggressive savings commitments.

"If we're buying a company whose security or IT systems were in such disarray that it would cause a huge investment just to keep the audit committee happy, we'd want to know that before we finalized the offer," Shelman says. "And I don't think anyone other than the CIO can make that evaluation."

In reality, however, "CIOs still don't have enough of a voice in the deal process," says Gregg Nahass, a partner at PwC Advisory Co. and leader of the company's Western region merger integration practice.

Indeed, Shelman had to make his own way onto the due-diligence team at Northrop. "The CEO never said, 'Call Tom. He'd better be involved in this,' " Shelman says. Instead, after Northrop's first merger, Shelman took it upon himself to meet with the M&A team and gave it a blueprint of how to make the next merger happen more smoothly. When that input proved valuable on the next deal, Shelman's team was recognized as a linchpin. "If you're not involved, you need to find out how to get involved," he says.

Spellacy says that looking at a potential merger from the IT perspective comes down to answering two key questions: What level of commonality in systems and operations can you help achieve by bringing the two parties together, and what is the integration effort required to make that happen?

"Is it just people and time, or do you have to write new software or middleware or entirely new systems?" Spellacy asks. "Or do we need a fundamental rethink of how you service the new business line with the systems you have?"

Preparing now so you can answer those questions early in the game can mean the difference between success and failure.

Brandel is a Computerworld *contributing writer in Newton, Mass. Contact her at marybrandel@verizon.net.*

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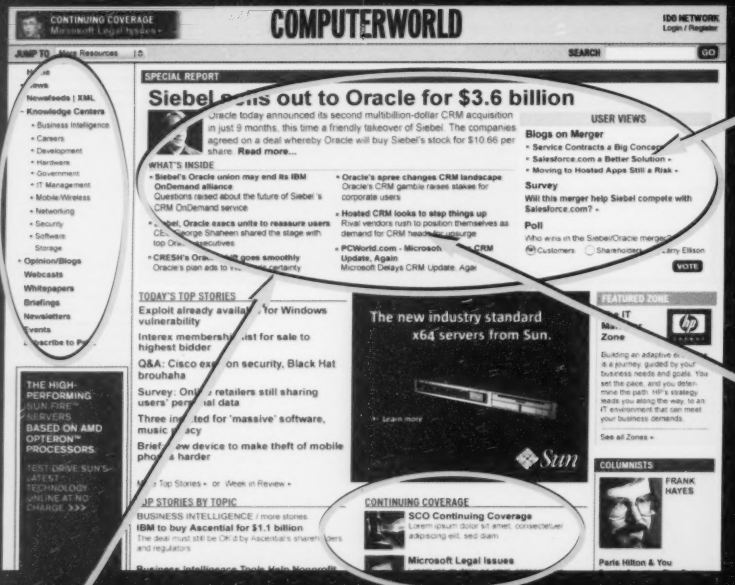

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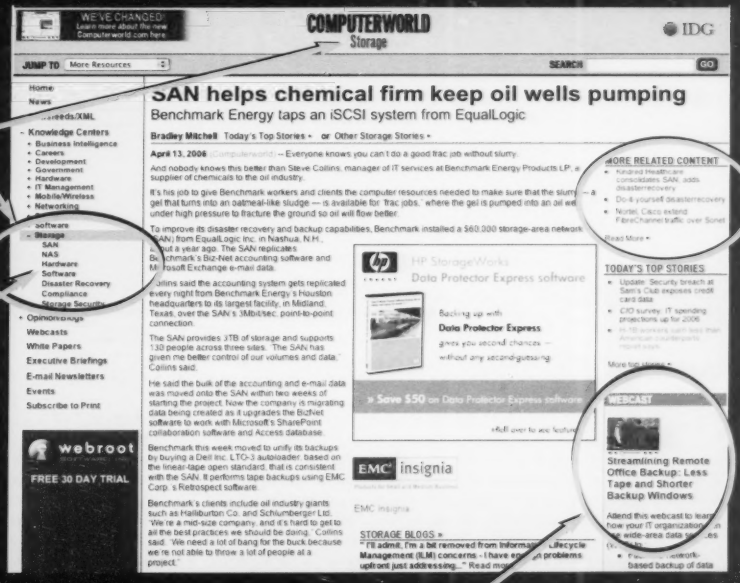

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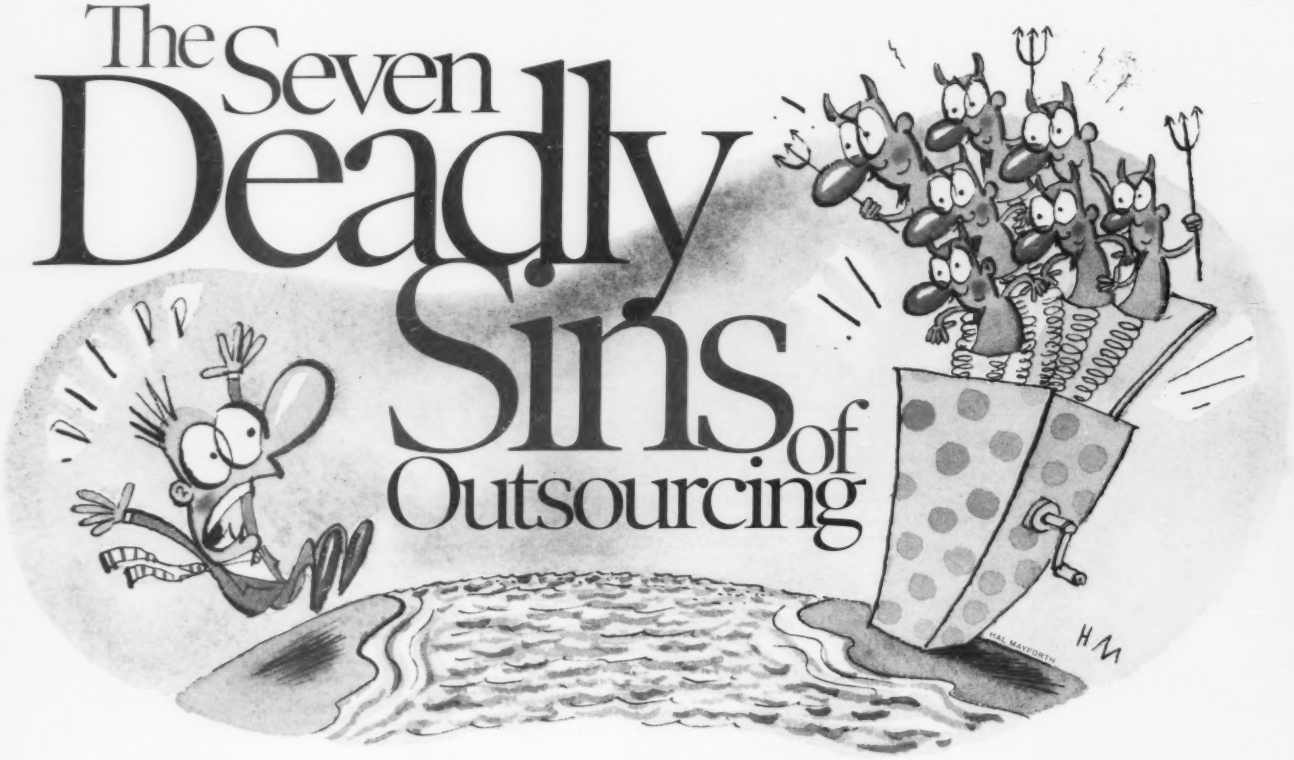
The Seven Deadly Sins of Outsourcing



These are the **transgressions** that can **doom** you to outsourcing **hell.** Here's how to **avoid** them.

By Judy Artunian

OUTSOURCING IS a source of stress, struggle and angst for many IT managers, and no wonder: More than half of outsourcing agreements end up prematurely terminated, according to a study released last year by DiamondCluster International Inc., a Chicago-based consulting firm. That leaves a lot of companies far from outsourcing nirvana, but it doesn't have to be that way. We asked IT experts and veterans to talk about the bad decisions and faulty assumptions that can cause your outsourcing project to fall from grace. They came up with seven deadly sins.

1 Feeble governance

VICE: You assume that your organization will automatically fall into a smooth working relationship with your outsourcing vendor. Three months later, you encounter management snafus that seem to have come out of nowhere. One large retailer outsourced a project that was supposed to take six months, but 18 months later, the CIO was still waiting for results. Why? "There was no governance plan other than a target for the end date," says Atul Vashistha, chairman and CEO of neoIT Inc., a consulting firm in San Ramon, Calif. "If they'd had a governance plan with milestones in place, they would have realized early on that targets weren't being met."

VIRTUE: Before you sign with an outsourcer, nail down an organizational structure, establish methods for keeping tabs on the work being done, and spell out how you will manage the outsourced project on a day-to-day basis. "Your governance system should provide continual feedback to the organization regarding how the relationship is working, what value you are getting, how you are solving problems that have cropped up," says Michael F. Corbett, executive director of the International Association of Outsourcing Professionals in LaGrangeville, N.Y.

Build the management costs into your budget. The average cost to manage an outsourcing contract is 3% to 6% of the size of the contract, according to Julie Giera, an analyst at Forrester Research Inc. in Cambridge, Mass.

2 Overblown expectations

VICE: You choose an outsourcing company for its ability to meet your primary goal, but later the company falls short in other areas. For example, one of Europe's largest manufacturers was so eager to trim expenses that it negotiated an outsourcing contract purely on cost. As the project progressed, the manu-

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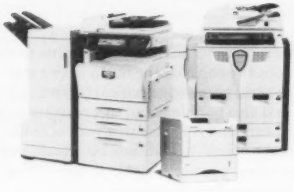

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Continued from page 56

facturer complained that the outsourcer wasn't innovative enough. How bad was it? Less than two years after signing the contract, the manufacturer terminated the agreement – a move that carried a steep price tag in penalties and legal fees.

VIRTUE: Don't even approach a service provider until you have prioritized what you expect to achieve by outsourcing. If you're shopping based on cost, you may have to give a little on service level. Keep in mind that a cost-based contract might be appropriate for standard services like infrastructure management but not for specialized skills such as application development. "You don't necessarily want the cheapest brain surgeon," says Giera.

When considering vendors, look beyond the sales pitches. "People select suppliers based on marketing and size rather than a true capability evaluation," says Vashistha. He suggests that you focus on the location where the work will actually be done. Ask the vendor about its resource pool. Are its employees experienced in your industry? Do they have the appropriate technical skills? How much training does the vendor provide? Talk to clients that the vendor has served from that location for at least 12 months.

3 Blindly banishing projects

VICE: You have offshored critical areas of your business to overseas suppliers that are inexperienced in your field or otherwise ill-equipped to handle the task, and customers are up in arms. For example, after Dell Inc. outsourced its technical support to offshore providers, the company was inundated with complaints from U.S.-based customers who reported that they couldn't understand the service providers because of their accents. Dell had to move a chunk of its technical support services back home to Texas.

VIRTUE: Use common sense and send projects offshore only to countries where your industry is mature. India and the Philippines, for example, while good choices for services like health insurance data entry, are poor choices for jobs that require decision-making related to health insurance, says Vashistha. That's because in-depth knowledge of the field is still scarce in those areas. "Health insurance wasn't prevalent even 10 years ago in those locations," he says.

Keep in mind that offshore projects cost more to manage than projects that are sent to domestic outsourcers. That can make small projects especially costly to send offshore. "A lot of people look at the money they'll save per hour but ignore that they'll probably have a 20% to 25% increase in administration costs," says Rich Hoffman, president and CEO of Hyundai Information Services North America LLC in Fountain Valley, Calif.

4 Dumbly disowning projects

VICE: You've outsourced so much of IT that your outsourcer knows almost as much about your customers, your products and your industry as you do. According to Hoffman, the IT department of another major automotive manufacturer recently realized that it outsourced too aggressively and is now trying to rehire nearly 150 former employees who went to work for the outsourcer. "When they outsourced all of those people, half left because they didn't want to work for an outsourcer, and the other half ultimately got transferred by the outsourcer to other companies," he says. "So they lost all the people who knew their customers, products, the automotive industry and business processes."

VIRTUE: Don't outsource functions that require you to provide outsourcing vendors with strategic information about your company and your industry. Also, Hoffman advises keeping most of your internal help desk activities in-house and discouraging other business units from outsourcing customer-facing activities. You will have more control over which processes get outsourced if you insist on being involved in all discussions about outsourcing. "Run an analysis ahead of time, and get a consensus with business leaders about what must stay in versus what must go out," says Hoffman.

Better Angels

According to Accenture Ltd., these are the seven best practices in outsourcing:

1. Tie the deal to broad business outcomes.
2. Hire a partner, not just a provider.
3. Act as if it's a business relationship, not just a contract.
4. Motivate the vendor through gain-sharing.
5. Use active governance.
6. Assign a dedicated executive.
7. Focus relentlessly on primary objectives.

5 Bad assumptions

VICE: Your five-year outsourcing contract failed to take into account that technologies and business requirements would evolve within those five years. Now you can't move forward with new technologies. Giera notes that because of changes in server technology, for example, many companies will need fewer, but larger, servers down the line. If your contract is based on a per-server, per-month formula, you may not be able to change that without being penalized financially, she says.

VIRTUE: Write a contract that gives you the flexibility to reprioritize projects and resources without a major penalty. "Technologies change so fast and the needs of clients change so fast, most parties should go into the contract expecting that after the first two years there is a pretty high likelihood that they'll have to renegotiate the contract," says Robert M. Finkel, an attorney at Milbank, Tweed, Hadley & McCloy LLP in New York.

Also, be sure the contact compels your outsourcer to keep costs in line as the market evolves. "Include benchmarking clauses every two to three years so that you can look at what's gone on in the market and make sure that the outsourcer is still competitive," says Giera.

6 Sloppy service levels

VICE: You've signed a contract that gives you minimal leverage on service levels. Now the outsourcer's poor service is interfering with your business, but you've got nothing to back up your demands for improvements.

VIRTUE: Define service levels in the contract and stipulate penalties for missed service levels. Having the service levels in hand not only helps ensure that you get the quality of service you expect, but it can also help when negotiating the contract's price tag. "It's hard to fix a price without knowing what the service levels are," says Finkel. But he says that it's not uncommon for vendors to want to wait until after the contract is signed before agreeing to specific service levels. That takes away your leverage and makes it less likely that you will reach a satisfactory agreement.

The penalties should escalate based on how frequently service levels are missed and how much the resulting disruption affects your business. "You shouldn't have penalties for one miss, but the penalties should get exponentially larger the more frequently a service level is missed," Giera says. And your contract can stipulate that you have the right to terminate or take back part of the service that the vendor is providing if the number or severity of the service-level problems reaches a certain point, Finkel says.

7 End-game myopia

VICE: You didn't include a transition plan in your contract. Now, as it draws to a close, your efforts to move to another outsourcer or bring the work in-house are stymied. An even worse case: Your outsourcing relationship ends abruptly. One of Giera's clients, a midsize manufacturing company, outsourced all of its payroll functions to a firm that suddenly went out of business. "My client couldn't pay its hourly workers on time that Friday. There were no provisions in the contract to get the data and employee records back, so they had to go to a manual payroll system," she recalls. The manufacturer ultimately spent eight months rebuilding its payroll system, including manually reconstructing tax, unemployment insurance and benefits records.

VIRTUE: To minimize disruptions to your business, make sure your contract calls for the outsourcer to be involved with the end-game transition. "Otherwise, what's the incentive for the vendor to help you?" says Finkel.

Your contract should stipulate that you may offer jobs to people on the outsourcer's staff who have developed knowledge critical to your company. You should also be able to buy at a reasonable price the hardware and software that your outsourcer is using on your behalf. In addition, be certain that the contract gives you usage rights to any software that the outsourcer develops for you.

And be sure to give yourself enough time to make the transition. "When you terminate an outsourcing contract, you'll probably need more time than you think," Giera says. "Specify in the agreement that you can extend the agreement with appropriate notice at your existing terms, conditions and price for up to 90 days." ▸

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Career Watch

Rolf Moulton

Q&A

TITLE: President and CEO

COMPANY: International Information Systems Security Certification Consortium Inc., known as (ISC)².

Recently, C.J. Kelly, one of the two writers of *Computerworld*'s Security Manager's Journal, had a job interview that left her feeling that the hiring organization had a confusing reporting structure ("Job Interview Raises Plenty of Questions," March 6). Her experience led *Computerworld*'s Jamie Eckle to talk with Rolf Moulton about how information security teams are organized.

Why do companies sometimes have confusing organizational reporting structures? How do they affect the people involved? To someone from the outside looking in, some organizational structures may seem confusing, but to those within the company, the structure makes sense. Many times, the priority that is placed on information security (based on that company's view of business risks, information services priority and the resources allocated to information security) and the experience of the executives determines the structure.

This has an effect on the staff and their roles. Someone reporting to the CIO or a higher-level executive will have different roles and responsibilities than someone reporting into internal audit. The audit function is typically responsible for reviewing the company's current situation and comparing that to company and industry standards. Someone reporting to a CIO typically focuses more on creating approaches and developing appropriate policies.

How important is it to learn the reporting structure of an organization when you're interviewing for a job? Are there red flags to look out for? An important part of any job search is to find out where your position will fit into the organization and who the key players are. The organizational structure does affect the role of the information security professional. If your background and interest is in audit, then reporting into audit may work best for you. For C.J., whose interests lie outside of the audit function, the prospect of reporting into audit naturally raised a red flag. The reporting structure and the key company players you'd need to deal with in the job are factors to be considered.

Is there an "ideal" organizational structure for information security? There are quite a few theories about the ideal organizational structure for companies and the functions within them. You need a context for the "best" fit for the security function, built around the goals of the organization, its size and makeup, the industry it is in and its requirements, and the executives, stakeholders and customers.

Looking at organizations from a broad perspective, information security is experiencing a dynamic shift. According to the 2005 Global Information Security Workforce Study conducted by IDC and sponsored by (ISC)², ultimate responsibility for information security moved up the management hierarchy over the past 12 months, with more respondents identifying the board of directors and CEO or CISO/CSO as being ultimately accountable for information security. The reporting structure of information security professionals is moving away from IT and audit.

The Best Jobs in America

NO. 1 Software engineer

NO. 7 Computer/IT analyst

Look who came out on top when *Money* magazine and Salary.com ranked the 50 best jobs in the U.S. Of the software engineer job title, the surveyors had this to say: "The profession's strong growth prospects, average pay of $80,500 and potential for creativity put it at the top of the list."

The two organizations looked at approximately 250 jobs in 19 industry groups, analyzing government and private-sector data on industry growth and compensation levels. But with the employment market improving and workers looking for more than just a paycheck, they then went further, surveying 26,000 workers about their job satisfaction. They graded careers based on factors such as stress levels, flexibility, creativity, and ease of entry and advancement in the field.

THINK BEFORE YOU PROMOTE

The biggest consequences of bad hiring and promotion decisions:

Lower employee morale	68%	Higher training costs	51%
Decreased employee productivity	66%	Higher recruitment costs	44%
Lost customers/market share	54%	Higher severance costs	40%

SOURCE: RIGHT MANAGEMENT SURVEY OF 444 NORTH AMERICAN ORGANIZATIONS, APRIL 2006

Looking to encourage and inspire a new generation of IT professionals, IBM has joined with the Computer Science Teachers Association to create two computer science courses for free use in high schools around the world. The partners last month unveiled the two custom course offerings and an accompanying teacher development module, which were the result of pilot projects late last year at four U.S. high schools and testing at two universities in the U.S. and Canada. Between September and January, the schools tried out lesson plans, student worksheets, accompanying PowerPoint presentations and snippets of related software code in their classes and then made revisions that led to the offerings now available.

The idea is to inspire students to pursue careers in technology and computer science and to ensure a continuing supply of skilled workers for companies worldwide, according to IBM.

Robin Willner, vice president of global community initiatives at IBM, said that in the past, the field of computer science was mostly about the tedium of programming, which left some students uninterested. But that has changed. "Now it's all about problem-solving," she said. "It's all about doing exciting work to find the next great thing. It's all about working in groups and collaborating" in diverse careers, including electronics, computer gaming, communications, aerodynamics, food services, environmental sciences and biotechnology.

– TODD R. WEISS

51%

Expected increase in the number of jobs requiring science, engineering and technical training through 2008.

SOURCE: U.S. BUREAU OF LABOR STATISTICS

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www.globalintegrationsummit.com

Technology Procurement

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www.dobetterdeals.com

Project Management

June 5-7, Scottsdale, Ariz.
Sponsor: Delivering Project Excellence

The conference includes tracks on the project management office, security and project management culture. Presentations include high-velocity project management; crucial conversations in project management; project accountability; how to deal with difficult people; resource planning and resource management; strategic project portfolio management; and project mentoring.

www.deliveringprojectexcellence.com

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June 20-21, Cambridge, Mass.
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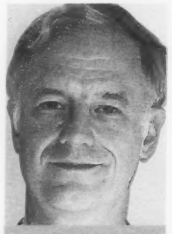
BART PERKINS

IT Energy Costs: The Quiet Budget Killer

MOST IT organizations estimate their standard infrastructure expenses based on servers, telecommunications and desktops. Few consider the cost of the electricity required to power and cool the equipment. With today's rising energy prices, companies can no longer ignore the cost of power. In some markets, the electricity bill for a server facility can run four to six times the cost of renting the building space.

The ratio of power costs to hardware costs can be staggering. According to *BusinessWeek*, when Paul Otellini joined Google's board, he learned that electricity for its "white box" servers cost Google more than the servers themselves. (*White box* is a computer reseller term for a device made by a lesser-known manufacturer on behalf of a major manufacturer, which then imprints its logo on the outside.) Even with a typical branded server, the cost of electricity can be 20% of the total expense of the rack over its life. This can rise to 25% or 30% in configurations with poor power utilization.



BART PERKINS is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. He was previously CIO at Tricon Global Restaurants Inc. and Dole Food Co. Contact him at **BartPerkins@LeveragePartners.com.**

You can reduce your energy costs by taking a proactive approach to energy management:

Operate your uninterruptible power supply, batteries and power-distribution systems in their most effective load range. Historically, load capacity could be expanded only in massive blocks. Increases were both expensive and disruptive, so power equipment was frequently sized for the server room's maximum eventual load. As a result, a UPS might operate at 20% capacity for years. Unfortunately, at low percentages of rated capacity, a UPS is very inefficient; 1 kilowatt input may yield only a half-kilowatt output. Newer UPS, battery and power-distribution systems are modular and can be expanded with little or no disruption to the server center as power requirements grow.

Design server layouts for cooling. While blade servers are generally more energy-efficient than traditional servers, more computing power per square foot translates into more heat (and cabling) per square foot, requiring additional cooling. Poor rack placement and cable mazes can hinder airflow. Facilitate cooling by fixing your layout flaws.

Enforce power-saving mode for unused equipment. Many desktops, monitors and printers are never turned off. Hibernation can save considerable power. This is not rocket science, but it does save money.

Select energy-effcient software. As energy costs rise, software designers need to consider energy efficiency. Tests of the preliminary version of Windows Vista reportedly indicate that it consumes 25% more power than Windows XP. Games are energy hogs too. On a recent trip, my daughter played a game on my laptop and was disappointed when the battery died after only 45 minutes; the game kept the CD drive spinning almost continuously.

Consider turning your legacy data center into a backup facility. Older data centers may not have adequate kilowatts per square foot for newer blade-server technology. Rather than performing extensive and costly renovations, some companies are simply moving into new server centers and relegating older faciiities to occasional use as backup centers.

Participate actively in server center design. In many companies, the facilities department designs, constructs and manages all physical space. In some cases, it even pays the electric bills. But as power costs increase, some companies (especially those with charge-out systems) are charging IT for their power consumption. If your organization is designing a new server center, be sure to put someone on the design team who understands the special energy needs of today's server environment.

Investigate DC power. Most power companies sell AC power because it's much easier to transport over long distances, but virtually all PCs and servers run on DC. So once the power gets to the server center, most server centers convert AC power to DC (while altering voltage multiple times) before it reaches the server. Some power is lost during each conversion. Hewlett-Packard, Sun, Intel and others are cooperatively building a DC-powered server center to test its feasibility. Monitor the issue of DC power in the service center through the Electric Power Research Institute.

Keep current on emerging technologies. Savvy manufacturers are starting to address energy efficiency concerns. Both Intel and Advanced Micro Devices are touting the energy efficiency of their new products based on dual- and quad-processing chips. American Power Conversion, Socomec Industriel and others now manufacture UPS hardware that adds capacity incrementally. This allows you to match your power capacity (and cost) to your current needs — rather than to 10-year projections. Don't pay for more power than you actually use.

Reducing your energy use is a relatively easy way to reduce your infrastructure costs. Buying more power than you need wastes money that could be better spent elsewhere. Make sure you get the maximum leverage from the dollars you spend on energy. ▸

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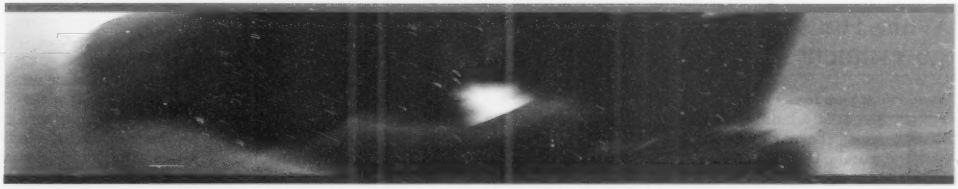

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Feds Aim to Cut IT Costs Through Consolidation

White House pursues plan to reduce government's infrastructure spending

BY PATRICK THIBODEAU

THE BUSH administration believes it can cut the U.S. government's annual IT infrastructure costs, proposed at $22.4 billion for fiscal 2007, by 16% to 27% through increased consolidation, standardization and interoperability.

Karen Evans, who heads the White House's IT office at the Office of Management and Budget, said in an e-mail that "potential government-wide cost savings are between $3.7 billion and $6.0 billion per year if the Federal Government operates as one enterprise similar to private industry corporations."

IT vendors and federal agencies were due to confidentially submit ideas on how to accomplish that goal by last Friday, and by next month, the White House wants to have a framework in place for guiding the proposed changes. A final plan is expected to be ready by year's end, according to the White House, which set the cost-reduction goal in March.

The government's overall priorities include reducing total cost of ownership, promoting a modular approach to system design and ensuring that installations of proprietary technology don't affect interoperability.

Seeking a Standard

The White House isn't necessarily moving toward a purge of legacy systems. But Tom Berti, data center manager at the U.S. Census Bureau, said last week that he thinks he can move as much as 80% of his IT environment to blade servers running a combination of Linux and Windows over the next three or four years.

Berti manages about 50,000 square feet of raised-floor data center space, with more than 1,000 pieces of hardware running a laundry list of operating systems, such as Tru64, OpenVMS, HP-UX, AIX, Solaris, Linux, Windows and others. But now the Census Bureau is starting to shift applications to blades from IBM and Marlboro, Mass.-based Egenera Inc.

"More than anything, I would like to have a standard configuration," Berti said. "How can you have a [workable] patch management strategy if all the operating systems are different?"

He declined to forecast the cost savings that the Census Bureau could see as a result of the planned shift. But, Berti said, "there are a lot of economies to [having] two manufacturers and two operating systems — that's what it comes down to."

For example, maintenance and training costs should be reduced, he said. He also expects to save money by centralizing systems management and buying his operating system software in bulk.

In addition, the agency is adopting more of a utility computing approach that should simplify and speed the provisioning of system resources, according to Berti.

There will be some exceptions to the blade server switch-over, such as the continued use of larger servers for applications that require symmetrical multiprocessing capabilities.

Berti has installed about 170 blades thus far and has just begun putting them into production use after an initial testing phase. The blade servers shouldn't cause power or cooling problems in his data center, which is a relatively new facility, Berti said.

Ray Bjorklund, an analyst at Federal Sources Inc. in McLean, Va., said that some defense agencies have been aggressive about pursuing IT consolidation and modernization initiatives. But that isn't the case at most federal agencies, he added. ▸

Technology Goals

Federal officials hope that the Infrastructure Optimization Initiative will yield these results:

- One-stop computing services for end users.
- Interoperability across all government sectors and with external business partners.
- Reduced ownership costs.
- Modular approaches to system design and the acquisition of IT services.
- Flexible systems that can scale from small installations to large ones.

SOURCE: WHITE HOUSE OFFICE OF MANAGEMENT AND BUDGET

Continued from page 1

Web Services

to begin using Web services to populate BI reports with data gleaned directly from its back-end SAP R/3 ERP system, Hewitt said. "With SOA, we would just go directly against the data source," he said. "You eliminate the process of the extra database and the [extract, transform and load]. All you would have to do is refresh your report to get real-time data."

Long & Foster is building an application that will use an SOA to feed data compiled by its Web monitoring vendor, Omniture Inc., into its SQL Server 2005 database. There, the data will be analyzed by Microsoft Corp.'s Analysis Services online analytical processing and data mining tool to determine the likelihood of a house selling in 30, 60 or 90 days, said Mayur Raichura, director of information services at The Long & Foster Cos.

The system will let agents access BI reports generated hourly by Microsoft's Reporting Services tool.

"The information would be dated without the Web services," Raichura said. "Without this information being available almost instantaneously, the reaction time would be too slow."

Beyond the Chosen Few

Coty Inc., a cosmetics company in New York, plans to purchase BI tools within the next six months to provide customer information reports to users in 25 countries, said David Berry, senior vice president and CIO.

Berry said that Coty will be able to expand the use of BI after installing iWay Software Inc.'s SOA Middleware product. The iWay software — which is being used to build an SOA to integrate a recent acquisition — also will be used to send and manage services needed to embed BI in business processes. The system will be in production within a year, Berry said.

BI at Coty is now limited to the "chosen few" employees, such as controllers and analysts, he said. Without the addition of an SOA, moving BI to front-line workers would require significant — and expensive — custom coding, Berry said.

"The SOA infrastructure is already there," Berry said. "It is a major piece of work and architecture you don't have to deal with when you go to BI."

Cross Country Healthcare Inc., a staffing firm for the health care industry, is planning to use Web services to integrate data from operational systems with BI analytic applications, said Kipp Vann, CIO at the Boca Raton, Fla.-based firm. The data will be sent to dashboards that managers can use to measure the performance of the company's recruiters, he said.

The application, scheduled to go live in the fourth quarter, will replace a manual spreadsheet-based process used to measure worker performance.

"The main reason we are looking at a Web service model is the real-time aspect of the data," Vann said. "It merges the concepts of what would be in a data warehouse and combines that with core operating systems."

Vann did note that there are drawbacks to using Web services rather than building integration interfaces. For example, as the project proceeds, developers are finding that services may require some customization as they are consumed by various back-end systems, such as ERP and financial applications. he said.

Wayne Eckerson, director of research and services at The Data Warehousing Institute, said embedding BI into operational applications that support multiple business processes is the "wave of the future" because it will make BI easier to use and more pervasive.

He added that most organizations that are interested in "operational BI" are looking to SOA to speed access to operational applications and the information they contain. ▸

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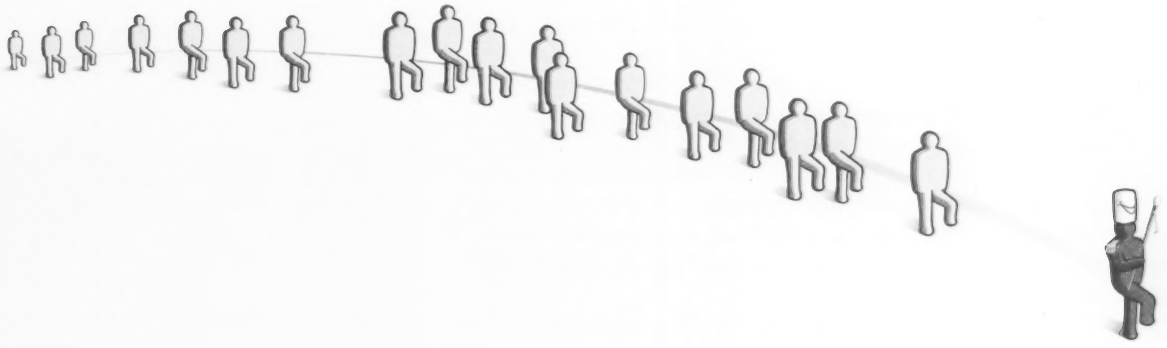

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FRANK HAYES ■ FRANKLY SPEAKING

Ghost Server

THIS ONE is just scary to read about: Ohio University said last week that someone hacked into an alumni database server and may have stolen personal information on more than 300,000 people and organizations, including 137,800 Social Security numbers.

No, that's not the scary part. It also turns out that, according to security logs, the server was compromised by early last year at the latest and that it was being used for a denial-of-service attack against an external target. In short, it was, as kids say, "owned." But that's still not the part that's so frightening.

Here's what's scary: Everyone thought this server was off-line.

In fact, it was supposed to have been decommissioned more than a year ago. IT managers thought it had been. Thus, logically enough, it didn't get any security updates or patches. After all, you don't patch an out-of-service machine. You don't waste any budget on it at all. It's dead.

But this unpatched server was still running and still connected. It was a ghost — officially dead, but still haunting the network. So it was hacked. And turned into a denial-of-service weapon. And the information on it was exposed to bad guys who could use it for identity theft.

There's an obvious lesson here, and it's worth saying early and often: There's no such thing as a decommissioned server. At least not until it has been unplugged, its disks have been wiped and its carcass has been carted away.

Just unplugging it from the power and the network isn't enough. It's too easy to plug it back in.

What about unplugging it, wiping the disks and putting it in storage? Still not enough. Some enterprising systems administrator in a cash-strapped department can easily dust it off, plug it in and restore it from backup tapes. *Voilà* — a functioning server at no incremental cost.

Except that, being off the books, it won't get the proper security treatment. No patches, no upgrades, no security log reviews.

We don't know whether that's what happened at Ohio University, or whether the server was supposed to be shut down and simply never was. But the result is the same either way: a ghost server, ripe and ready to be compromised.

What's worse, we can be pretty sure that most organizations *won't* take that last step and physically dispose of decommissioned IT equipment. A roomful of out-of-service servers is just too handy. They're good for parts, they're good for emergency replacement machines, they're good for skunk-works projects.

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And everybody's happy when IT can magically deliver a working server in almost no time and without spending a dime. That's the sort of responsiveness we always preach. It delights users and makes IT people feel like the wonder workers we know we are.

Hauling that equipment away is good security policy. But when a good security policy runs against the interests of both users and IT, it's unenforceable.

So don't try to enforce it. If you don't physically dispose of old servers, assume that they could resurface at any time. That means you have to keep watching for them — constantly scanning your networks for unusual traffic from machines that aren't supposed to exist.

You have to hunt them down. Otherwise, you can't lock them down.

Don't trust your inventories. Don't trust your network maps. Most of all, don't trust that as long as you're careful to wipe personal information like Social Security numbers, the worst that can result from a ghost server is an embarrassing news story about how there's a hackers' playground on your network.

Remember, a ghost server isn't just a machine where some intruder can serve up pirated files or launch denial-of-service attacks. It could also be a gateway for attacks in the other direction — on your networks, users and information.

And for IT, that's one *really* scary possibility. ◗

You Break 'em, We Fix 'em

Support pilot fish arrives at a remote site to discover that a server has crashed – and crashed hard. "Can't boot into Windows, can't do diagnostics," says fish. "I ask the office manager what happened. She said that a few weeks ago, the server started reporting errors on the screen. She then proudly stated that they would simply shut the power off and turn it back on, and it would work again for a day or two. This morning, it wouldn't come back – it just ran in an infinite reboot mode. Only then did they think to call us."

SHARK TANK

Um, No

User's PC keeps restarting on its own, so support pilot fish hustles to his office, quickly diagnoses the problem and offers to track down and install the replacement part ASAP. "Just take the whole machine," user says. Seeing fish's puzzled look, he adds, "You'll have to reinstall all my programs and data on the new one, right?" Sighs fish, "I've dealt with a lot of confused users, but I'll never know why he thought his programs and data were stored on his surge suppressor."

What's Missing?

It's this new employee's first day, and her manager has an early meeting, reports a pilot fish in the know. Just get settled in, and I'll be back, manager says. An hour later, manager returns to find new hire complaining that the PC turns on but nothing else happens. "After checking some obvious things, they called tech support," says fish. "The tech took the cover off the PC, only to find it had been gutted. All components had been removed, with the exception of the power supply. But the little light came on."

Echh!

IT pilot fish returns to his desk at lunch to find a cell phone with a note – Won't ring, please fix. "In between bites of burger, I updated the settings I assumed would fix the problem," says fish. "No luck. Just then, the phone's owner stopped by my cube. I told him that I'd updated the settings but that the phone still didn't work. 'I'm not surprised,' he said. 'It hasn't worked since I dropped it in the toilet at the airport.' The phone went in the wastebasket. So did lunch."

The War on Users

"Our IT department has apparently complained that it is too big a pain for them to reset passwords that us moronic users are constantly forgetting," reports a user pilot fish. "Thus, a decree has come down that it will now require a week's notice to get a password reset. In order to prevent us from forgetting, we've been instructed to write down all our passwords and keep the list handy."

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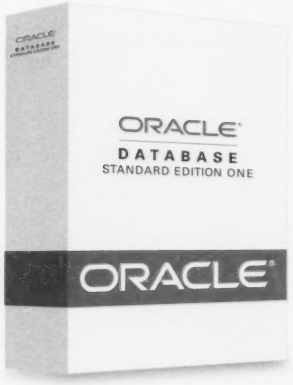

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